# The Chemical Age

**A Weekly Journal Devoted to Industrial and Engineering Chemistry**

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*NOTICES:—All communications relating to editorial matter should be addressed to the Editor, who will be pleased to consider articles or contributions dealing with modern chemical developments or suggestions bearing upon the advancement of the chemical industry in this country. Communications relating to advertisements or general matters should be addressed to the Manager.*

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*THE CHEMICAL AGE INDEX.*

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## A "Chemical Age" Reception

To celebrate the opening of the new offices of THE CHEMICAL AGE in Bouverie House, Fleet Street, London, the headquarters of Benn Brothers, Ltd., and its associated companies, Sir Ernest Benn and the directors are giving a reception at Bouverie House on Friday next, July 16, from 4 to 6 p.m. Tea and music will be provided in the reception room, and we hope to have a small but interesting collection of chemical exhibits. The acceptances already to hand indicate a representative gathering, though distance and business claims will prevent many friends in the country from attending, who would otherwise have been glad to be with us. Some greetings of a particularly friendly character have been received, and the senders are asked to accept our sincere acknowledgments and appreciation. In issuing the invitations we have made an effort not to overlook any old friends, but omissions are usually possible in such matters, and if any have occurred we shall be delighted to rectify them on receipt of an intimation.

## Complete Wet Purification

IN our comments in these columns recently on the report of the Chief Inspector under the Alkali Acts attention was drawn to the fact that the complete wet purification of coal gas had been operated on a working scale in this country, though not as yet in its final form. It is, perhaps, noteworthy that little information is given in the report as to the exact mode of operation of the process selected for experiment, but we are told that in its latest form it depends upon the absorption of sulphuretted hydrogen and hydrocyanic acid by means of an alkaline solution, with the recovery of sulphur as a subsidiary operation. Although, of course, no precise information has reached us as to the method which has been adopted in the trial plant, a guess may be hazarded that the system follows broadly that introduced in America by the Koppers Company. There are probably many of our readers who will have been intrigued by Dr. Lewis Bailey's disclosure as to developments over here, and for this reason it will be of interest to those who have not come in touch with the details of the Koppers method to be given a brief outline of its working.

In the first place it lends value to the process to bear in mind that there are some thirty or more plants in America now employing it, and that it is in operation under a variety of conditions, treating a number of different types of gases, such as coal gas, coke oven gas, water gas, oil gas, and natural gas. It is believed, too, that plants have been constructed to deal with so large a quantity as 30 million cubic feet of gas per day. Briefly, the process utilises as an absorbing medium a dilute solution of sodium carbonate of from 1 to 3 per cent. strength. The apparatus employed consists of a single tower divided into two compartments, the upper section being known as the absorber, and the lower section as the actifier. The gas passes through the absorber where it is washed with the sodium carbonate solution, the spent solution then flowing to the actifier in which it meets with a current of air. The process involves, therefore, two reversible reactions, namely:—

(1) $H_2S + Na_2CO_3 = NaHS + NaHCO_3$
(2) $2NaHCO_3 = CO_2 + H_2O + Na_2CO_3$

It is found that an excess of sodium bicarbonate is essential for proper actification, this excess being produced by the carbon dioxide which occurs in practically all artificial gases. A point in favour of the process is, of course, that, in addition to sulphuretted hydrogen, it is valuable in extracting hydrocyanic acid, the reactions involved being on similar lines to those given above and taking place simultaneously with them.

Purely from a theoretical consideration of the process it would be expected that certain secondary reactions would assert themselves, and this, in point of fact, is the case. In the early stages of development there

was a good deal of concern as to what might occur with respect to these side reactions, since there was the possibility of forming all sorts of oxysulphur compounds as well as cyanogen derivatives. As a matter of fact, however, although secondary reactions do occur, they result only in the formation of two compounds, namely, sodium thiosulphate and thiocyanate, and these only in small quantities. These compounds gradually accumulate in the circulatory system until the rate of their formation is balanced by the rate of mechanical loss; moreover, both salts are very soluble, and the maximum amounts present in any system are far from the crystallisation point.

As the process seems likely to arouse no little interest in this country now it is known that official attention is being given to it, it may be as well to mention that the approximate consumption of sodium carbonate in the application of the process to the purification of coal gas is 1 lb. for every 8 lb. of sulphuretted hydrogen removed, and of this, roughly one-third is due to mechanical losses, one-third to the formation of sodium thiosulphate, and one-third to the formation of sodium thiocyanate. The Chief Alkali Inspector rightly draws attention to the difficulty in devising (for use in this country) a method of economically recovering the sulphur, but his succeeding remarks rather lead to the impression that this problem will not have to wait long for its solution. This being the case, it is possible that gas purification may undergo revolutionary changes within the next few years.

## Annual Reports on Applied Chemistry

We have recently received for notice a copy of the volume issued annually by the Society of Chemical Industry containing the customary reports in which are recorded the progress made and the outstanding events which occurred in the chief branches of applied chemistry during the past year. The value of this particular work that the Society undertakes is self-evident, for, in these days of progress that is almost spectacular, even comparatively modern text books quickly get out-of-date, so that the Annual Reports provide supplementary information which considerably lessens the labour involved in keeping abreast of developments. On previous occasions, however, we have expressed the opinion that some endeavour should be made to publish the volume earlier than is usually the case, and we still feel that in this respect there is room for improvement. The value of the information collated largely depends upon its absolute freshness, so that many opportunities may be lost and much time wasted in needless search if it is some six months out-of-date before it is published.

It cannot be questioned that the Society manages to secure as contributors the services of the most authoritative workers in the applied chemical sphere. Possibly only those who have been sufficiently altruistic to undertake the task can appreciate what a mass of both English and foreign literature has to be studied, and what a small relation the bulk of the final report bears to the time expended in compiling it. The present is the tenth consecutive volume which has been published under the editorship of Mr. T. F. Burton, and it is noted that the particular branches of applied chemistry (twenty-three in all) are sectionalised in much the same way as in the past few years—an arrangement upon which it would be difficult to improve. It is also to be noted that more than half of the contributors were responsible for the same subjects in the previous year, a fact which, though probably undesirable in that it tends to restrict treatment to the point of view of the individual, may have its advantages in bringing experience to bear upon the work of collation. We are glad as usual to be able to subscribe our meed of praise for the manner in which a difficult and arduous task has once more been brought to a successful conclusion, and we would draw attention to the fact that purchase of the book is not confined to members of the Society.

## The Merchant's Future

The future of the merchanting industry generally, and especially of the traders who deal in chemicals and dyestuffs, was stated with some force by Mr. Victor Blagden at the annual meeting of the Chemical and Dyestuffs Traders Association on Thursday. The case he puts in favour of the merchant as a link between producer and consumer and as an important developer of business operations is quite sound, but the growth of great companies organised to handle their own products at every stage from the ownership of raw materials to delivery to the retail customer tends distinctly to restrict rather than to expand the field open to the merchant proper. It is another case of changing conditions, and the result depends on the ability of the interests affected to adapt themselves and establish new points of contact to replace the old. On the safeguarding of industries by tariff or otherwise the address no doubt expresses the general feeling of the merchant community, and the same is true in the case of the Dyestuffs Act, which was also criticised with some vigour. Here, however, it may be noted that there is no open demand for the repeal of the Act, the objections relating mainly to details of its administrative methods. These matters, however, have been so frequently threshed out that there is little really new to be said. The points of view of those who want free imports of foreign products and of those who want certain home industries safeguarded against free imports are simply irreconcilable.

## Russian Chemical Research

Of the fourteen papers, which cover a total of 247 pages, in the *Journal of the Russian Physico-Chemical Society*, Vol. 57, Parts 6–9, just received, two deserve special mention. One is a paper by A. E. Makovetzky on molecular structure (pp. 549–604), which attempts to develop a mechanical theory of atomic configuration and which will scarcely find a following in this country, since spectroscopical work, entirely neglected by Makovetzky, has given enough insight into the structure of the molecule to disregard Makovetzky's speculations. There was a time, say twenty to thirty years ago, when Makovetzky's theoretical considerations might have been considered more or less seriously, but in the light of our present knowledge of molecular structure one may predict with some degree of certainty that Makovetzky's paper will have little or no following amongst

English chemists and physicists. However, a good English abstract of this Russian paper is desirable and it is hoped will be forthcoming.

The second paper is by K. A. Taipale (pp. 487–548), and deals with catalytic reduction in general, with special reference to the azines. It contains a great deal of interesting material and an excellent summary of the literature. Here, again, a good abstract should be a valuable source of information. Reference must also be made to a paper by S. S. Nametkin and A. S. Zabrodina on camphenone (pp. 379–382) which is of general interest. Since, however, the same paper has already appeared in the *Berichte* for 1926 (p. 368), although this is not mentioned in the Russian *Journal*, it is easily accessible to readers in this country.

## The Industrial Importance of Pectins

THE pectins form a class of highly complicated organic substances, the nature of which is not yet completely elucidated. As in other branches of organic compounds patient investigations have gradually reduced the number of pectins which have been described in literature to only three or four distinct bodies. Galacturonic acid, $HOC.(CHOH)_4.COOH$, which is closely related to the sugars, is known to be a component of the pectins, but further than that our knowledge of the structure of these substances is far from definite. Complete pectin molecules are probably built up from fragments consisting of galacturonic acid, various sugars, and cellulose molecules, any of which may be methoxylated, etc. The pectins are uncrystallisable colloids, which can be precipitated from their solutions by alcohol and various salts, very frequently being obtained in their gel form. They differ from the celluloses by being insoluble in an ammoniacal solution of copper salts. They are hydrolysed by prolonged boiling with acids—*e.g.*, $H_2SO_4$ of 4 per cent. strength.

Our knowledge of the industrial applications of the pectin bodies is far more satisfactory; and they are, of course, largely used for giving "body" to jellies by binding excess water present and making them stable. Apples, citrous fruit, etc., contain appreciable quantities of pectic matter. The commercial pectins, prepared by water extraction processes, are as a rule crude mixtures containing varying proportions of the valuable constituent. They should, therefore, always be purchased on analysis. The pectins on the market are produced from apple peelings, offal of the cider industry and such like, generally by extracting the pectinous matter and evaporating the solution.

The great industrial importance of the pectins lies in their ability to form at ordinary temperatures jellies containing a large proportion of water. With the great development of jam and preserve manufacture, the production of pectin is becoming an industry. On account of competition, jam makers find it necessary to standardise the amount of solids entering in the composition of the products without affecting appearance. A small proportion of a good pectin is, therefore, of considerable value in permitting a reduction in the quantity of fruit and sugar.

Liquid pectins are preferred by manufacturers since they go easily and completely into solution, while solid pectins demand great care as they easily cake together and are then dissolved with difficulty. The pectins can also be employed as sizing agents and for the production of mucic acid. In comparing the strength of two samples of pectin for jellying purposes, it is essential that all conditions, notably the quantity of salts and acidity, should be the same, as the hydrogen ion concentration exerts a controlling influence on the formation of fruit jellies. Nevertheless, this point is debatable as some acids for some unknown reason are more efficient than others in aiding the production of a firm gel.

## Congress Prospects

THE prospects for the Congress of Chemists to be held in London during the week beginning July 19 are reported on every side to be excellent. The returns indicate a large and representative attendance, including a number of overseas visitors. The Chemical Plant Exhibition, the first of its kind organised in connection with the annual meeting, is expected to be good, not only for its illustration of current types of chemical plant, but also on account of the attention it will draw to the importance of constructional materials, especially in regard to corrosion. A number of addresses by recognised authorities have been arranged for, and the discussions promise to be quite abreast of the latest developments. There will be opportunities of visiting various works, of which chemists attending the Congress will doubtless be glad to avail themselves. On the social side a programme of very attractive engagements has been completed.

### Books Received

A GREAT ORGANISATION.—A Record of the Achievements of Boots Pure Drug Co., Ltd., Nottingham. Pp. 64.

SIMPLE QUALITATIVE ANALYSIS (PRACTICAL CHEMISTRY, PART III). E. J. Holmyard. London: G. Bell and Sons, Ltd. Pp. 40. 1s.

## The Calendar

| | | |
|---|---|---|
| July 19 | Institution of Chemical Engineers: Fourth Annual Corporate Meeting. | Committee Room D, Central Hall, Westminster, London. |
| | Annual Dinner. 6.30 p.m. | Empire Room, Hotel Great Central, London. |
| 19–23 | Society of Chemical Industry. Annual meeting. | London. |
| 19–24 | British Chemical Plant Exhibition. 10 a.m. to 8 p.m. daily. | Central Hall, Westminster, London. |
| 20 | British Chemical Plant Manufacturers' Association: Annual Meeting. 2.30 p.m. | 166, Piccadilly, London, W.1. |
| | Annual Dinner. 6.30 p.m. | Hotel Great Central, London. |
| Aug. 4–11 | British Association for the Advancement of Science. Annual meeting. | Oxford. |
| Sept 20–24 | Chemists' Exhibition. | St. Andrew's Hall, Glasgow. |

# British Chemical and Dyestuffs Traders

## Chairman's Criticism of Government Policy

*At the annual general meeting of the British Chemical and Dyestuffs Traders' Association, in London on Thursday, the Chairman (Mr. Victor Blagden) criticised the Government action in relation to Key Industries and the administration of the Dyestuffs Act, and generally defended the existence of the merchant business as an aid to trade.*

THE Chairman said he proposed to deal with the two important matters of general interest affecting their interests, namely, the Key Industries legislation and the Dyestuffs (Import Regulation) Act, and afterwards to say a few words on the general position of merchant traders in chemicals and dyestuffs, surrounded by controls, restrictions, and import duties on the one hand, and, on the other, by the growing tendency of manufacturers to endeavour to eliminate the merchant as a distributor.

### Key Industries

The first matter, that of the Key Industries legislation, had received the closest attention from the Council in view of the approaching end of the 1921 Act. They were not satisfied with the manner in which the renewal of the import duty had been secured. As far back as last November the Council made inquiry at the Board of Trade, asking "whether it was intended or not to renew, either in its present or some revised form, Part I of the Act." The reply was "that the Board of Trade were not at present in a position to make any statement on this subject." In December last they were invited to submit in writing a detailed statement giving any views on the past year's operation of the Act. The Council considered this unsatisfactory, and at once replied that "until we were informed whether the Government, through the Board of Trade, contemplated renewing this legislation, we were of opinion that no useful purpose would be served in submitting a detailed statement as suggested." They added that "in the event of your department contemplating submitting a recommendation to the Government in favour of further protection being afforded the chemical industry, the fullest inquiry should be instituted and the opinion of all interests taken prior to such recommendation." The Council advised the Board of Trade that "if the chemical industry of this country, either as a whole or any part of it, desired further protection, and if their position warranted such protection, adequate means were at their disposal by way of an application to your department for a committee of inquiry under the new provisions for safeguarding industries."

The position remained unchanged up to the beginning of February this year, the Board of Trade still replying "that they were not in a position to make any statement on the subject." The Council submitted a memorandum to the Board of Trade on February 22. Early in March they were informed by the Board of Trade in a confidential manner that a committee of inquiry had been appointed by them to report upon the subject, and they were invited to meet the members of the Committee on March 10. The meeting took place and they substantiated the statements made in their Memorandum. The report and recommendations of that committee was dated March 29, but it was not published till April 22, only a few days before the Finance Bill containing provisions for the renewal of the Key Industries legislation was introduced in Parliament.

For five months they had persistently inquired of the Board of Trade as to what action they intended to take and proposed that a public inquiry before a properly constituted Committee should be set up to deal with the matter, and the only reply received from November to March last was "that they were not in a position to make any statement on the subject." Yet, all the time this committee of a partisan character had been appointed. That is a full account of the negotiations and the method adopted by the Board of Trade to ensure a favourable report. The composition of that body in their opinion was highly partisan. Consuming and trading interests were not given representation; it was neither representative nor impartial; it was in fact a "safe" committee, fettered and bound to give a favourable report. The report therefore could not be accepted as genuine or authoritative. He wished to make the strongest possible protest to the Government against the method they had adopted. In formulating and operating these trade restriction measures the Government departments concerned did not provide for the existence of the merchant as a necessary and valuable part of the industry. Indeed, it seemed to him that their actions were not so much directed to assisting the manufacturer as to killing the merchant.

### A Denial

Recently, in Parliament, the suggestion was made by a responsible Minister that all the protests and resistance to the safeguarding of key industries originated in or was influenced by continental interests. That was the argument made by the Government in reply to warrantable criticism. He wished to deny that in the most emphatic manner. The policy of the Association, as directed by the executive council, had never been in the slightest degree influenced by any continental or other foreign opinion. As Chairman for the past three years, he made this statement with a full knowledge of the facts. He regretted that this was the only manner of reply that had so far been forthcoming from the Government, a suggestion that had not the slightest evidence to support it.

### Dyestuff Licences

Referring to the position of the dyestuffs merchant under the Dyestuffs Act, Mr. Blagden said that the Dyestuffs Act continued in force and was still operated in a manner that was giving anything but satisfaction. The Act was to prohibit the import of any aniline colours similar to those produced by home makers, yet it was being operated by those in authority and used by the interests protected for a vastly different purpose. The licensing committee persisted in demanding the names of merchant's customers for whom the dyes mentioned on applications for import licences were required. Such information, by its very nature, should be treated as confidential, yet they were continually finding that it filtered through to home makers. Here was an instance of what happened. A merchant applied for a licence to import a quantity of a certain scarlet colour, to be sold to a customer at 3s. per lb. The licensing committee, having obtained the name of the merchant's customer (a consumer), replied that a similar colour could be obtained from a British maker. The merchant accordingly asked this home maker for a price and was quoted 4s. 7d. per lb. In the meantime, the name of the merchant's customer and particulars of the price he was to pay for the imported colour had been obtained by the home maker. Having obtained this trade information, the maker went direct to the consumer and quoted him at 3s. per lb. The merchant, upon being acquainted with this fact, protested and asked why he was quoted 4s. 7d. while his customer could buy direct at 3s. He was informed by the maker in question "that the price to him was 4s. 7d. per lb." So, with the aid of the Dyestuffs Act as operated by the licensing committee, another blow was struck at the merchant. The facts of the case were brought to the notice of the licensing committee, and they did not deny them or attempt to excuse them; all they could say was "they regretted it." Yet the same thing was going on to-day. Neither the licensing committee nor any maker had the right to use the Dyestuffs Act to force a merchant to hand over his business goodwill to competitive interests, as was done in this case.

The licensing committee continued to work in secret. No one knew what licences were granted. Once more he made the suggestion that the practice of publishing full details of licences granted should be adopted forthwith. Until this was done, rumours of a disturbing character were bound to continue. He could offer no other reason for the persistent refusal of the Board of Trade to their application for representation on the licensing committee. A merchant representative on that committee would, he imagined, not be to the liking of some interests represented.

### Merchant's Place in Industry and Commerce

Last year he spoke freely on the desirability of co-operation between makers and distributors, and he was then hopeful of a marked improvement in that direction as time went on.

Unfortunately, this had not been the case. The general policy of the manufacturer in the chemical trade was to do his business by direct contact with consumers, although that course might very likely mean less business than to deal with merchanting firms whose special business it was to distribute in an efficient and economical manner. No one who had the slightest commercial knowledge would suggest that consumers were benefiting ; on the contrary, they often suffered by the formation of rings and syndicates. This policy appeared to be supported by the Government with whom manufacturers collaborated and was strengthened by the network of protective measures now gradually enveloping the country. This policy was being advocated and given active support to by some of the most powerful industrial groups in the country directly associated with monopolies. The object in view was to cut out the merchant and leave the field clear for the manufacturing groups. Under such conditions consumers would quickly find they were bound hand and foot by combines ; they would be forced to accept arbitrary contracts and be generally under the heel of the manufacturer. What facilities did the merchant offer the consumer ? First and foremost, a competitive market offering a variety of sources of supply. The merchant rendered the consumer credit facilities, obtained the most economical form of transport, and saw that the goods delivered were of the right quality. The merchant had specialised in distribution ; he knew his markets, and had, by his experience, built up an efficient machine offering manufacturers a safe and steady outlet for their products in bulk quantities, usually paying cash for what he bought, thus relieving the maker of all risks connected with handling the goods and market depreciations. It would be better, he thought, for the manufacturers to give their whole attention to improving their processes of production and research work, and leave the intricate business of distribution and its attendant risks to those who had in the past shown their capability to perform such services to the general benefit of all concerned. To-day they had the spectacle of some manufacturers in the chemical trade speculating in raw materials, and in dealing in the products of other manufacturers. The Government departments who were concerned with trades, and were hindering their return to prosperity by their meddling, should not take sides in the matter, but treat both parties alike.

# Forthcoming British Congress of Chemists

## Industrial Chemistry and National Progress

*To the Editor of* THE CHEMICAL AGE.

SIR,—The vital importance of applied chemistry to almost every form of national industry and its intimate relation to the stability and progress of British manufacturing processes are, happily, widely recognised to-day by our industrial leaders. From the point of view of keeping the research staff attached to industrial works in the closest possible touch with the latest developments, we venture to appeal to the heads of all industrial firms who employ chemical or other technical and scientific research staffs to provide facilities and even inducements to enable them to attend the forthcoming Congress of Chemists which is being organised in London, for the week beginning July 19, by the Society of Chemical Industry.

This Society (which has a membership of over 5,000) is engaged with kindred organisations in the constant dissemination among chemists and chemical engineers of the latest results of technical and scientific research throughout the world. The London Congress will be a rare opportunity for enabling research and works chemists throughout the country to meet together for the exchange of views and experiences, and at several of the sessions, opportunities will be given for hearing our highest authorities deal with problems of immense industrial and commercial interest, including such questions as corrosion, the development of alcohol motor fuels, the extraction of sugar from waste wood, modern chemical plant design and manufacture, the improvement of chemically resistant steels, irons and alloys, the commercial production of such natural drugs as insulin, etc. In addition, there will be visits to a large number of works, illustrating the essential part that industrial chemistry plays in most of our commercial processes.

Employers whose organisation includes research departments would, we feel sure, be serving their own interests and helping to maintain national efficiency and progress, by giving their technical staffs access to the great advantages of such conferences and by encouraging their personal association with the societies that are working to keep British chemical science and industry abreast of the latest theoretical and industrial advances.—Yours, etc.,

W. J. U. WOOLCOCK, President.

Society of Chemical Industry,
London, July 7, 1926.

## Some Features of the Congress

### British Chemical Plant

IN connection with the forthcoming Congress of Chemists, to be held in London, July 19 to 23, a British Chemical Plant Exhibition is to be opened in the Conference Hall, at the Central Hall, Westminster, at 11.30 a.m., on Monday, July 19. The chair will be taken by Dr. R. Seligman, the chairman of the British Chemical Plant Manufacturers' Association, and the opening ceremony will be performed by Sir Max Muspratt, Bart., the President of the Federation of British Industries. The Exhibition will remain open each day during the week from 10 a.m. to 8 p.m. Personal invitations to the Exhibition are being addressed by the Association to all who are taking part in the Congress of Chemists, and the 40 exhibitors are inviting the presence of their many friends and clients.

The success of the Exhibition is now well assured ; practically all the space is booked, although inquiries are still being received for the two or three sites still available. The classified catalogue of exhibits, which will be supplied *gratis* to all visitors, will contain many pages of exhibitors' specially descriptive announcements, and will constitute a useful and permanent guide to the British Chemical Plant Industry, supplementary to the official directory of the Association. Any attempt to indicate the nature of the exhibits would involve the recital of an index of chemical plant. It is sufficient to say that every phase of plant manufacture will be covered by the various firms who specialise in the production of particular lines. In addition, there will be exhibits by firms who make a speciality of producing semi-scale plant for the purpose of experiments prior to the putting of laboratory results on to the large scale.

The organising committee has, however, not confined the Exhibition to a collection of interesting and up-to-date plant, but has paid special attention to the all-important question of the constructional materials which exert such a large influence upon the life of plant. Enamelled plant and silica materials will occupy prominent places, and particular emphasis is being laid upon the various metals, alloys, rustless irons and steels and so forth, now available, which have been proved by experience to withstand corrosion by various chemical substances.

Such important allied arts as lead burning, etc., will not be neglected. Attention is also being paid to the improvements now rendered possible in general engineering practice in chemical works in the way of regulators, steam accumulators, heat exchangers, etc. The first British Chemical Plant Exhibition will be well worth a long and detailed inspection.

### Sugar from Wood

YET another example of the success of industrial chemistry in utilising waste material for the production of essential commodities will be furnished during the Congress of Chemists at a conference on the extraction of " Sugar from Wood."

The process by which this result is obtained has already cost about a quarter of a million in research, and has recently been taken up in this country. It has long been known that if dry sawdust be treated with very strong hydrochloric acid solution the cellulose is converted into sugars, principally

glucose. At the conference an account will be given by experts of the difficulties experienced in the conversion of a laboratory process into a commercial operation. Simple though the operation would seem, there are at least five different ways of carrying the process into effect. These various modifications, slight in themselves, but vastly important in relation to the commercial development, will be described and illustrated.

The necessity of carrying out the process with stoneware, the only material capable at the commencement of being used with fuming hydrochloric acid solution, rendered the cost of the plant in relation to its size commercially uneconomic, and a new material has had to be discovered for the process. It will be of interest to learn that on the cwt. scale about 65 lb. of sugar have been obtained from 100 lb. of dry sawdust. In view of the fact that the world's requirements for glucose amount to two or three million tons per annum, and that of all the timber cut in the world 20 per cent. is wasted as sawdust or small wood, the value of the new process, if it can be worked out commercially, is obvious.

### Alcohol Motor Fuels

As the Queensland Government, the Distillers' Co., Ltd., and others are starting a number of plants for the production of alcohol from molasses and starch-bearing crops in Queensland for the production of a motor fuel of which alcohol will form the major portion, the records of some trials with such mixed fuels to be given at the forthcoming Congress of Chemists in London will be of practical interest in view of the fact that the German Government has recently put upon the market a fuel of this nature. As last year about 80 per cent. of the world's records were obtained on fuels containing alcohol, there can be no doubt as to the suitability of these mixed fuels for power generation. The results of the tests to be disclosed will go to show the large possibilities of economy involved.

Mr. Tizard, of the Department of Scientific and Industrial Research, at a recent Congress on Fuel, estimated that if the engines of this country were altered to work on 6½ to 1 compression, it would result in a saving of many millions of pounds per annum. With existing fuels this alteration cannot be made, but with alcohol as a constituent of the fuel it may become a possibility.

### Rubber and Paint Problems

A VERY important function at the Congress will be a Joint Conference, which has been arranged by the Institution of the Rubber Industry and the Oil and Colour Chemists' Association, for Thursday morning, July 22, the subject selected for discussion being the "Influence of Particle Size in the Paint and Rubber Industries." Sir William Bragg will take the chair, and the proceedings will be opened by Dr. D. F. Twiss and Mr. C. A. Klein, who will respectively survey briefly the general bearing of the particle properties of pigments in the rubber and paint industries.

A number of interesting papers will follow, dealing with various specialised aspects of this important subject. The necessity for a direct measurement of particle size will be advanced by Mr. H. Green, of the New Jersey Zinc Co., while Mr. A. de Waele will deal with the subject of the factors affecting the dispersion of pigments. The discussion will be continued by Dr. P. Schidrowitz, who is to contribute a note on the influence of particle shape, and by Dr. S. S. Pickles, who has selected as his topic "The Properties of the Various Forms of Carbon Black."

Three further papers to be read are concerned with the presence of coarse particles and grit in fine pigments. Mr. B. D. Porritt and Mr. G. Gallie will describe a simple laboratory apparatus which has been evolved for the separation and estimation of grit; while Messrs. Noël Heaton and E. A. Murphy respectively will deal with the occurrence of grit in the products used in the paint and rubber industries. A number of other well-known scientific and technical men have intimated their intention of being present at the meeting and participating in the discussion.

The subject of the effects of particle size and shape is one of great scientific and technical interest, and the Conference can scarcely fail to provide a welcome opportunity for chemists engaged in widely differing fields to exchange views on a topic of common interest.

The list of papers to be read at this Conference is as follows: "The Importance of Particle Properties in the Rubber Industry," by Dr. D. F. Twiss; "The Importance of Particle Properties in the Paint Industry," by Mr. C. A. Klein; "Carbon Black," by Dr. S. S. Pickles; "The Necessity for a Direct Measurement of Particle Size," by Mr. H. Green; "An Apparatus for the Estimation of Grit in Pigments," by Messrs. B. D. Porritt and G. Gallie; "The Detection of Grit in Rubber Compounding Ingredients," by Mr. E. A. Murphy; "The Different Types of Dispersion and Some Factors Affecting Same," by Mr. A. de Waele; "A Note on Particle Shape," by Dr. P. Schidrowitz; and "The Influence and Elimination of Coarse Particles," by Mr. Noël Heaton.

### Hormones and National Health

A FURTHER joint meeting of great interest will be held jointly between the Biochemical Society and the London Section of the Society of Chemical Industry during the Congress. It will be held at the Hotel Great Central, at 11 a.m. on Tuesday, July 20. Sir Alfred Mond, M.P., a former Minister of Health, will preside, and the subject under discussion will be the scientific and industrial problems presented by the hormones. These substances are the natural drugs of the animal body, synthesised by special glands, whereby the life-processes of the body are controlled and regulated. They are becoming increasingly important in both medicine and industry.

Perhaps the best known of these hormones is insulin, which has recently raised great scientific and public interest in connection with the treatment of diabetes, but there are other equally important hormones, *e.g.*, adrenalin, thyroidin, pituitary and ovarian hormones, etc., which are absolutely essential to the proper functioning of the body. The discussion of these substances will be opened by Dr. H. H. Dale, Sec. R.S., on the scientific side, and Mr. F. H. Carr, President-elect of the Society of Chemical Industry, will open the discussion of the technical problems connected with their production on a commercial scale, while a number of experts will contribute papers dealing with the properties and testing of these substances.

A general discussion will follow the papers, in which it is desired that those interested in the subject will participate. It is hoped that the meeting will serve the double purpose of presenting a clear picture of the present position and future possibilities of these important therapeutical substances, and of demonstrating the close interdependence of biochemical research and chemical industry.

## Repairs to Silica Tubes

*To the Editor of* THE CHEMICAL AGE.

SIR,—We notice your remarks in the issue of July 3 (Metallurgical Section) regarding repairs to silica tubes, and for the benefit of not only Messrs. Rogers, but other users of silica tubes, might we direct their attention to an article published in the *Welding Journal* of May, 1926, in which details as regards repairs to silica tubes are very ably set out.—Yours, etc.,

THE DISTRICT CHEMICAL CO., LTD.
W. R. J. BRITTEN.

106, Fenchurch Street, E.C.3.
July 6.

### New Sheffield Laboratories

DURING the celebrations of the coming-of-age of Sheffield University, held last week, new engineering and metallurgical laboratories were opened by Sir Robert Hadfield. Declaring the laboratories open, he contrasted the capital invested in Sheffield industries with the money spent on University work. He said nearly £100,000,000 were invested in Sheffield's industries, or about £550 per head of the employed population. So far about £635,000 had been spent on the University and the annual expenditure was but £130,000. These figures represented one-half per cent. of the city's invested capital and two and a half per cent. of the probable income from it. Presiding at the function, Lord Crewe expressed gratification at the relations existing between the business men of France and England, and particularly between representatives of the steel industry. The Master Cutler, Mr. T. R. Ellin, entertained members of the University to lunch.

# Mond Nickel Co.'s Annual Meeting

## Record of Steady Progress

THE twelfth annual general meeting of the Mond Nickel Co., Ltd., was held on Friday, July 2, at the Grosvenor Hotel, London, the chairman of the company, Sir Alfred Mond, presiding.

In the course of his address the chairman said that the profit and loss account showed an increase in net profit of £112,000 and an increase in gross profit of £85,100. With regard to the assets side of the balance sheet, they would notice that there had been an increase of £188,000 in the item mines, freehold and leasehold land, houses, and smelting works in Ontario (Canada). This was largely made up of further capital expenditure at their smelter, improvements to the plant at their mines, and development work at their Frood Mine. The balance was represented by the erection and equipment of their sulphuric acid plant for the manufacture of sulphuric acid from their waste smelter gases, to which he would refer later.

As regards the properties in the United Kingdom, additions during the year amounted, roughly, to £81,800. This was partly due to further expenditure at Clydach, where they had not yet completed their extensions, and partly to expenditure at the new precious metal refinery in London, as to which he would like to say that it was operating very successfully and with very good results, both as regards economy in cost and efficiency in that very important branch of their business, the department for the recovery of metals of the platinum group from their residues. They had also obtained a contract for the refining of the Onverwacht platinum, which was likewise turning out quite satisfactorily. They were open to undertake similar work for others who might want platinum refined, as they now had a very efficient plant and a very efficient staff. They had maintained their plants both in Canada and in this country in a very up-to-date and efficient condition out of revenue. With regard to Henry Wiggin and Co., of Birmingham, one of their associated companies, they were at present engaged in developing and reorganising still further both the works capacity and sales and propaganda department of what they could now look on as an established and profitable part of their operations.

### The American Nickel Corporation

Last year he had made some remarks about the reorganisation of the finances of the American Nickel Corporation, and he then stated at some length the position of that corporation. They had been busily engaged throughout last year in extending and reconstructing its plant, and the advantages of that work had only begun to be apparent in the last month or two. They had sunk a very considerable amount of money in that company, but he was satisfied with the continuous progress that was being made, both from the technical and the selling point of view. It had not yet, however, contributed to the revenue of the Mond Nickel Company, but he hoped it would do so in the not too distant future. It had been a long and difficult task; they had had to create a works and a staff, and also to meet over there the competition of other people carrying on similar operations; but the products which they manufactured there, and which consisted mainly of rolled nickel sheets and pure nickel products, anodes, etc., were of a quality which was being very much appreciated, and their business was steadily extending month by month.

With regard to these two companies, he pointed out that they had a direct and indirect interest to the Mond Nickel Company. As makers of nickel they had every interest in extending the use of the article they manufactured by owning and having control of the manufacture of nickel products, and especially of that large range of nickel-copper and nickel-chrome alloys which were daily beginning to play a more and more important part in the metallurgy of the world. They had had by their own efforts in research, propaganda, and sales to extend the use of their own raw material, and it had led their board, during a time of great depression in the nickel industry, to go into these developments, which they were all quite convinced would grow in importance from year to year. There was no doubt that the whole world to-day was asking more and more for alloys, either of the steel series or the copper-nickel series, which were non-corrosive. He was glad to say that they had a very able expert staff of metallurgists at their service, but also, from time to time, they had thought it not unwise to subsidise the research work which was being done by such institutions as the National Physical Laboratory and in other directions, for it was on the broadening of the basis of their product that the real continuous future development of their company lay.

### The Sulphuric Acid Plant

He was glad to say that the sulphuric acid plant which they had put up last year was in operation, and was producing a first-rate product, and in spite of a good deal of competition, was selling its output, and operating at a profit. It was an interesting development, for it was the first time that sulphuric acid had been manufactured in Canada from the waste gases of smelting Canadian ores instead of from imported sulphur. It had fully justified itself in two ways: it had enabled them to diminish, if not get rid of, the nuisance of putting sulphur into the atmosphere, and as the gas was entirely a waste by-product, it was naturally a very cheap raw material, and therefore a profitable form of operation.

The position of the company was essentially very sound. If he had any criticism to make it would be that the consumption of their main article, especially in Europe, owing to the financial stringencies and difficulties on the Continent, was not showing that expansion they would like to see—it had rather, on the other hand, shown a diminution. Great Britain formed an honourable exception. Of course, the financial stringencies of Germany and the fluctuations in the exchanges of other countries were not factors that tended towards brisk or busy trade. On the other hand, the great American continent, in whose markets they had a large and growing interest, showed that capacity of expansion which they were watching with admiration and envy from this side of the Atlantic. They were displaying in respect of almost every product of that country an ever-increasing capacity for consumption of practically all the staple articles. Still, they had every reason to believe that checks of this kind were merely temporary. They were in the fortunate position, or unfortunate—he thought fortunate in certain respects—that they had practically completed for some time, as far as he could see, any large programme of capital expenditure, having both in Canada and here capacities exceeding at the present time, and probably for some time to come, any possible demands which might be made upon them. That meant that they could look forward as consumption expanded to an increased revenue and increased profits without having to call for further large capital amounts.

### Copper Sulphate as Slug Destroyer

He would like to refer to one matter which might interest a good many people. They were manufacturers of copper sulphate, which was the basis of most useful sprays for most kinds of mildews and pests of that kind on fruit trees and potatoes, and in other directions. He was informed that the University of Leeds, in conjunction with the Yorkshire Council for Agricultural Education, recently published results of tests demonstrating the effect of sulphate of copper in the presence of potash, as a specific for killing slugs. This is one of the latest developments of the research of the Yorkshire Council for Agricultural Education.

The chairman also touched upon the employees' participation scheme. It was not a profit-sharing scheme in the ordinary sense of the word, but operated in the following way. A standard cost had been fixed, this being for the present the cost of refining as calculated for the purpose of the scheme for the year 1924. This standard cost, of course, was liable to variation from time to time as a result of improvements in process not due to the employees or to any reduction in the cost of raw material. The actual cost of production, for the purpose of the scheme, was calculated monthly at the works, and the amount by which the actual cost is less than the standard cost was the saving in cost, which was divided between the company and the employees, according to the scale in force by which the whole of saving up to a certain

amount was given to the men, and over and above such figure was divided between the company and its employees.

The amount of saving credited to the employees was credited to the members of the staff in proportion to their salaries and to the workmen in proportion to the hours worked at the standard rate of wages.

Mr. Emile S. Mond, the deputy-chairman, pointed out that the chairman was himself very largely responsible for the satisfactory results which had been put before them. He mentioned, as an instance of the constant and intensive effort which they were constantly making in every direction, that they had recently been reorganising the various research and propaganda departments. This would mean the spending of a great deal of money, but they could take it from him that it would not be spent to their disadvantage.

The retiring directors, Sir Ellis Griffith, Mr. Henry Mond, Mr. Philip Mond, and Mr. Robert Mond, were re-elected.

## Professor Haber on Poison Gas

### Attitude of German Chemical Industry

PROFESSOR HABER, the well-known German chemist, who, with Professor Nernst and Dr. Duisberg, was closely associated with the German use of gas in the late war, took part in a discussion on "Disarmament and Gas Warfare" promoted by the German section of the Inter-Parliamentary Union held in the Reichstag on Thursday, July 1.

Professor Haber expressed the view that it would be a very good thing if the peoples of Europe could understand that war was an unprofitable business and that it was best for them to live in peace. The war, which had begun by being fought out between soldiers, had now been carried into the hinterland, where every munition worker was a combatant. The aeroplanes would dominate the air in the near future to such an extent that the hinterland would be within the range of attack, women and children with it. In the war of the future iron ore would still be the decisive factor and not gas, but by the loss of the Lorraine mines Germany had practically no iron ore left.

Discussing the relative effects of high explosive and gas, Professor Haber said that if in a future war Berlin were to be bombed, the former would account for an incomparably larger number of casualties. Gas operated through panic, which rendered orderly government impossible. In the war very few men had been killed by gas, but as soon as there was the slightest smell of gas courage began to evaporate. This was because the men were faced with a new sensation and were victims of psychological effects. It was absurd to suppose that the organic life of a great city could be annihilated by gas bombs. It was true that by concentrating on a spot great losses could be occasioned. But if high explosives were concentrated on the same spot there would be simply nothing left. Although there had been great advances in the technology of gas, the progress had now slowed down. There were no secrets. Even lewisite was known in the war; it had the great disadvantage that it was noticeable; before it was effective counter-measures could be taken in advance. War gas had never been used for bombing from aircraft. Count Zeppelin had wanted to bomb Verdun with gas bombs, but General von Falkenhayn had rejected the proposal.

From Germany's point of view, it would be a good thing if gas warfare were to be prohibited altogether, because gas could only be tested in the open and Germany, being, unlike all other nations, not allowed to make these experiments, was far behind. The soldiers were always against the use of gas unless the other side began it, but it was always difficult to say who had begun it. For example, in the early part of the war it was reported that British troops had used gas shells. He had gone forward to make an examination and found that picric acid had been used as an explosive and the fumes had been mistaken for gas. Similar incidents might happen again and the gas war would be there. The German chemical industry was altogether opposed to the use of gas in war. On account of its activities in this field it had drawn upon itself so much hatred and brought about so much competition that it had no desire to repeat the experience. Not gas warfare in itself, but war altogether, with massed aircraft attacking the hinterland and not sparing women and children, was the inhuman monster which politics should oppose.

## Chemical Matters in Parliament

### Fertiliser Imports and Production

Replying to Mr. Hore-Belisha (House of Commons, June 20) Sir P. Cunliffe-Lister gave the following figures for the imports of nitrogenous fertilisers into Great Britain and Northern Ireland in 1925. Ammonium sulphate, 151 tons (£2,023), nitrate of lime, 101,551 cwts. (£58,026); nitrolim or cyanamide of lime, 1,020 cwts. (£509); sodium nitrate, 1,626,483 cwts. (£1,020,854). The production of sulphate of ammonia in Great Britain in 1925 amounted to 388,000 tons. Similar particulars for other nitrogenous fertilisers were not available.

### Mineral Rights Duty on Salt

Colonel Lane Fox (House of Commons, July 1), replying to Mr. Taylor, said that the Mineral Rights Duty payable on rock salt and brine was charged as defined in Section 20 of the Finance (1909-10) Act, 1910.

### Tarbrax Shale Mines

Mr. S. Mitchell (House of Commons, July 1) asked whether the Government would consider the possibility of taking steps to assist the shale industry as the Scottish Oil Co. had intimated that they intended to abandon the shale mines at Tarbrax, and especially as good housing accommodation existed in the locality; or whether they would assist in the setting up of some other form of industry there. Sir John Gilmour replied that he could give no undertaking on these points.

## American Chemical Society Announcements

IN the course of an announcement regarding the 1926 conference of the Institute of Politics at Williamstown, Mass., Professor J. F. Norris, President of the American Chemical Society, has stressed the importance of the fact that the central topic of the conference is "The Rôle of Chemistry in the Future Affairs of the World." Leading men of science from the United States, Great Britain, and the Continent will participate in the discussions, which will be organised and directed with the co-operation of the American Chemical Society.

"The willingness of the Institute to accept this topic is a recognition of the importance of chemistry in world affairs," says the announcement. "It affords a long-sought opportunity to reach economists, politicians, and men of affairs with examples of the relationship of chemistry to the most important activities of modern civilisation, and the vital necessity in consequence of research adequately supported in continuity. It is proposed to discuss such important topics as future food supplies, energy—present and future sources and their utilisation—chemistry in conservation, stressing wastes in industry and increased efficiency in production, synthetic versus natural products, chemical developments in their relation to labour, chemistry in world domination through commerce and in national defence, and the relation of chemistry to world health."

Dr. Norris says that the year 1926 will be the greatest in the history of American chemistry. It will mark the fiftieth anniversary of the founding of the Society, to celebrate which a semi-centennial meeting lasting one week will be held in Philadelphia, beginning September 6. The history of American chemistry will be presented in a series of papers, a committee headed by Dr. C. A. Browne, chief of the U.S. Bureau of Chemistry, Washington, having been named to make a thorough survey of the field. The Society will be host to a large gathering of foreign chemists who will go to America to attend a meeting of the International Union of Pure and Applied Chemistry, to be held at Washington, D.C., during the week beginning September 6. This is the first meeting of the Union in America. Many of the delegates will take part in the semi-centennial events at Philadelphia and in the Williamstown Conference.

During the year, the movement to establish an Endowment Fund will be developed by the Society. The purpose of the Fund is to provide for the support of the Society within the ranks of its own membership, a principle which, chemists believe, may have a far-reaching influence on other similar bodies. Prof. Leo Hendrik Baekeland, of the Department of Chemical Engineering in Columbia University, and a past-president of the Society, has offered "to contribute as many dollars as there are members who give at least one dollar." Prof. Baekeland has already contributed $10,000.

# From Week to Week

COLONEL J. WAKEFIELD WESTON, a director of Nobel Industries, Ltd., is one of the new baronets announced in the Birthday Honours List.

SIR ALFRED MOND has been appointed vice-chairman of a Parliamentary Committee appointed to examine the question of Co-partnership in Industry.

DR. G. H. CHRISTIE HAS BEEN APPOINTED Lecturer in Chemistry in the Durham Colleges of the University of Durham. He is a graduate of the University of Sheffield.

THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND held its show at Reading this week from Tuesday to Saturday. Among the exhibits of fertilisers was one of calcium cyanamide.

THE IGNITION of a quantity of carbide, carelessly poured down a drain by a cyclist at Hackney and lighted by a dropped match, caused Thomas Wright, aged 15, to be severely burned about the hands and face.

IN CONNECTION WITH THE CONGRESS OF CHEMISTS to be held in London from July 19 to July 23, a Press reception will be held at the Chemical Industry Club, 2, Whitehall Court, London, S.W.1, on Tuesday, July 13.

A TAR DISTILLER, at the works of the South Suburban Gas Company, Lower Sydenham, caught fire on Thursday, July 2. The distiller was severely damaged and the fire brigade had to be called before the outbreak could be extinguished.

THE BLOWING OUT OF TWO FURNACES at the Govan works of William Dixon, Ltd., has brought the production of pig iron in Scotland to a complete standstill. There are approximately 100 furnaces in Scotland, of which 85 are in operation in normal times.

THE CHEMISTS' CLUB OF NEW YORK will award two scholarships to students in industrial chemistry and chemical engineering. One is the Bloede scholarship, with an income of $500, and the other the Hoffman Scholarship, with an income of $400. Competition is open to every State in America.

DAMAGES AMOUNTING TO £10 10S. were obtained by the Redcar Services, Ltd., against Malcolm Smyth Mainland, an analytical chemist, at Tunbridge Wells County Court, on Monday, June 28, for damage caused to one of the company's motor omnibuses by negligent driving.

THE GERMAN STEEL TRUST loan, being 90 million marks worth of bonds, issued at 98 and bearing 7 per cent. interest, was so successful that the subscription lists opened in Germany on Tuesday were closed within five minutes. The American part of the loan, $30,000,000, has also been successfully floated.

RECENT WILLS INCLUDE: Mr. Joseph Foley, of Winterbourne, Marlpithill, Edenbridge, for over forty years London representative of Stevenson and Howell, Ltd., manufacturing chemists, £29,138.—Mr. Francis Allen, J.P., of Swaffham, Norfolk, a director of Stafford Allen and Sons, Ltd., manufacturing chemists and essential oil distillers, £120,793.

DR. J. F. TOCHER HAS BEEN APPOINTED by the Council of the Institute of Chemistry, in accordance with clause 4 of the Therapeutics Substances Act, as the representative of the Institute to serve as a member of the Advisory Committee which is concerned with the preparation of regulations relating to the manufacture, sale, and importation of vaccines, sera, and other therapeutic substances.

SOME IRISH PHARMACEUTICAL ASSOCIATION members recently visited Lever Brothers' Vinolia Works at Port Sunlight and were entertained to lunch by the Board of Management. Mr. Laurnan, vice-chairman, referred to the late Lord Leverhulme's interest in Irish trade and the high standard of pharmacy in Ireland. Appreciative speeches were made by Messrs. Conyngham, Ellis and Misstear, Dublin; Mr. Widdess, Limerick; and Mr. McLoughlin, Belfast.

THE BRITISH AND SAAR STEEL CO., LTD., was recently registered as a private company, with a capital of £10,000. It is a subsidiary of the Roechling works, one of the leading industrial enterprises of the Saar district. The object of the company is to sell in this country the products of the Roechling works. It was registered on July 7, and the capital is divided into 200 shares of £50. The directors are Major the Hon. Edward C. Lascelles, Mr. N. Testrup, and Mons. A. Willard, Paris, managing director of the Société Anonyme Française de Forges et Acierces de la Sarre.

APPLICATIONS ARE INVITED for the following appointments:—A director for the Research Association of the British Paint, Colour and Varnish Manufacturers. Whole or part time. Applications to J. B. Graham, 8, St. Martin's Place, London, W.C.2.—Temporary assistant chemists, at least B.Sc. Second Class Honours or equivalent. Men £160–£10–£220, women £140–£10–£180, both plus Civil Service bonus. Forms of application from the Government Chemist, Clement's Inn Passage, London, W.C.2.—A research chemist for work on plaster and other materials used for impressions and models in dentistry. About £500. The Secretary, Department of Scientific and Industrial Research, 16, Old Queen Street, Westminster, London, S.W.1.

MR. ARNOLD PHILIP, B.Sc., Admiralty chemist, is retiring from his post after twenty-four years of service.

TWO PERSONS WERE KILLED and twenty-eight injured in a chemical works explosion which occurred in Northern Calcutta on Saturday, July 3.

A CONTRACT from the Anglo-Persian Oil Co., Ltd., for the protection of oil tanks and refinery at Abadan, Persia, has been received by Foamite Firefoam, Ltd., London.

THE WILL OF MR. SAMUEL VERNON KAY, of Stockport, a director of Kay Brothers, Ltd., manufacturing chemists, has been proved at £149,289 gross, with £132,674 net personalty.

MR. D. MILNE WATSON, Governor of the Gas Light and Coke Co., was invested with the degree of Doctor of Laws at the annual conferment of degrees at Leeds University, on Saturday, July 3.

MR. D. H. BANGHAM has resigned from the position of Lecturer in Chemistry in the University of Manchester, on his appointment to the Chair of Physical and Inorganic Chemistry in the Egyptian University, Cairo.

SIR HUGH AND LADY BELL'S golden wedding on August 10 is to be marked in a suitable manner by the people of Middlesbrough. A fund is to be started and the contents are to be placed in the hands of Sir Hugh and Lady Bell.

A BUST OF MICHAEL FARADAY, the famous scientist, and the son of a Southwark blacksmith, is contemplated for the Central Library in Walworth Road, Southwark, and the Mayor has been invited by the borough council to raise the necessary funds for its erection.

G. F. BERRY AND CO., importers and exporters of chemicals, colours, minerals, and raw india rubber, have moved to Avenue Chambers, Southampton Row (opposite Kingsway), W.C.1. (Telephone numbers Holborn 2291 and 5595; telegraphic address Rubenchem, Westcent, London.)

THE COMMONWEALTH INSTITUTE OF SCIENCE AND INDUSTRY has offered scholarships to Melbourne University men of the value of £300 per annum, with a travelling allowance of £150. Research is to be directed in one of three directions: Food problems, principally cold storage; liquid fuel; or forest products.

THE INSTITUTE OF CHEMISTRY of Great Britain and Ireland has issued its *Register of Fellows, Associates and Students*, corrected to March 31, 1926. The register comprises 352 pages and includes the designations or other indications of the occupations and branches of work of Fellows and Associates who have supplied such information.

REPRESENTATIVES OF THE BUYERS' side of the nitrate of soda industry have arrived in Chile, at the invitation of the Nitrate Producers Association in Valparaiso, in order to discuss the marketing end of the business with a view to improving this and other means of improving the industry. Conferences are already taking place, and the results of the deliberations are awaited with great interest.

EPHEDRIN, a drug long used in China for the treatment of asthma, has, according to Dr. Ko-Kuei Chen, professor of pharmacology in the University of Wisconsin, Madison, a much stronger action than adrenalin in raising the blood pressure, and is an excellent means for the treatment of asthma. Similar observations have been made in the Mayo clinic at Rochester (America) and in the University of Pennsylvania.

THE BIRTHDAY HONOURS LIST issued on Friday, July 2, included the following: A knighthood—Colonel H. G. Lyons, F.R.S., Director and Secretary of the Science Museum; K.B.E.—Sir F. W. Dyson, Astronomer-Royal, and Professor W. Somerville, late Sibthorpian Professor of Rural Economy, University of Oxford; C.B.—Mr. G. C. Simpson, F.R.S., Director of the Meteorological Office, and Mr. F. E. Smith, F.R.S., Director of Scientific Research to the Admiralty.

A SCHOLARSHIP, value £105, allotted to New Zealand by the Fellowship of the British Empire Exhibition, has been awarded to Mr. H. L. Richardson by the New Zealand Government, which has granted a subsidy of the same amount. The scholarship commences on October 1, and will be tenable at the Rothamsted Experimental Station, Harpenden, for research in agricultural chemistry. Mr. Richardson is at present studying at the Imperial College of Science and Technology, where he holds a Dominion Science Scholarship, tenable for two years from October, 1924.

## Obituary

DR. OTTO WIEDFELDT, at Essen, aged 55, managing director of Friedrich Krupp and Co. In 1923 he acted as ambassador to the United States.

MR. J. H. F. HILL, of 3, Victoria Street, S.W.1, one of the original members of the Institution of Chemical Engineers. Mr. Hill, who graduated in Sydney, had since the war acted as a consultant, specialising in acid plants and mineral dressing.

TORSTEN BERG, in Stockholm, American vice-consul, aged 73. For many years he was chief engineer at the Holmestead steel works of the Carnegie Steel Co. of Pittsburgh, and afterwards technical representative in Europe of the United States Steel Corporation.

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# Patent Literature

*The following information is prepared from published Patent Specifications and from the Illustrated Official Journal (Patents) by permission of the Controller to H.M. Stationery Office. Printed copies of full Patent Specifications accepted may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at 1s. each*

## Abstracts of Complete Specifications

252,756. Treating Zinc White or similar Metallic Oxides, Lithopone or White Lead for use in the Preparation of Paint. A. van Lerberghe, 97, Rue du Faubourg de Tournai, Courtrai, Belgium. Application date, January 2, 1925.

A mixture of zinc white and water is treated in a mill to form a moist paste, which is then mixed with a saponifiable siccative oil containing free fatty acid, which may be obtained by incorporating 6–7 per cent. of linoleic acid. Zinc linoleate is formed and is separated from water and then treated in a cylinder crushing mill. The product has elastic and waterproof qualities at least equal to those of white lead. Other white pigments can be treated in a similar manner.

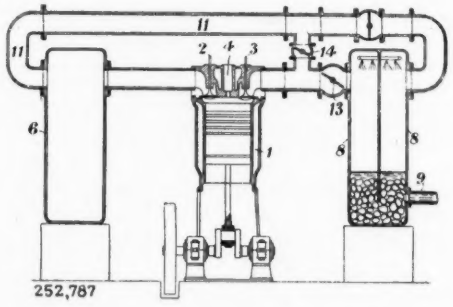
252,768. Treating Barium Peroxide to obtain Hydrogen Peroxide and an improved "Blanc Fixe." I. E. Weber, 51, Claremont Road, Luton, B. Laporte, Ltd., Luton, and E. Alcock, The Knoll, Luton. Application date, March 2, 1925.

In the manufacture of hydrogen peroxide by reaction between barium peroxide and phosphoric acid, it has been found that the impurities contained in the barium phosphate are only slightly soluble in phosphoric acid, so that they can be separated by treating with phosphoric acid and filtering off. Sulphuric acid may be added to the solution to precipitate barium sulphate, and the purified phosphoric acid is returned to the cycle. The purification of the phosphoric acid is progressive, so that there is no loss from this source. The barium sulphate obtained is of a good white colour.

252,786–7. Light Oil suitable for use as fuel for Internal Combustion Engines, Producing from Liquid and Solid Organic Bodies. M. Brutzkus, 25, Rue St. Didier, Paris. Application date, March 5, 1925.

The substance to be treated is introduced into the cylinder of a compressor constructed like a Diesel engine, and subjected to hydrogenation and cracking.

The compressor 1 is provided with a valve 2 to admit hydrogen from the reservoir 6, an injection valve 4 through which liquid is injected, and an exhaust valve 3 through




which products pass to the reservoir 8. These valves are actuated by a cam shaft. The products are washed with water or other liquid, which passes out through passage 9, and the gases pass on through pipe 11 back to reservoir 6. The temperature and pressure of the mixture in 6 are regulated by valves 13, 14. The reactions are effected according to a principle which is stated as follows :—" Any chemical reaction can be directed and accelerated in the desired direction by continuous and simultaneous variations of pressure, temperature, and concentration, these variations being produced from outside in directions opposite to those of the variations provoked by the desired reaction. Exothermic reactions are effected during the expansion stroke by cooling, and endothermic reactions by an increase of pressure and heating." Examples are given of the cracking and hydrogenation of crude oils, tar oil distillates, sugar, and other solid organic bodies, and also the synthesis of light fuel oils from water-gas, producer-gas, coke-oven gas, coal gas, blast furnace gas, etc.

252,820. 2-amino-naphthalene-1-carboxylic Acid or its Nucleal Substitution Products, Manufacture of. O. Y. Imray, London. From Farbwerke vorm. Meister, Lucius, and Brüning, Hoechst-on-Main, Germany. Application date, March 12, 1925.

These products are obtained by the action of an oxidising agent such as hydrogen peroxide on β-naphthisatin or its derivatives at raised temperatures. Lead superoxide is not suitable as an oxidising agent, as the yield is not good and the products are not pure. Examples are given of the treatment of β-naphthisatin and bromonaphthisatin.

252,848. Alkyl Esters of Formic Acid, Manufacture of. J. Y. Johnson, London. From Badische Anilin and Soda Fabrik, Ludwigshafen-on-Rhine, Germany. Application date, April 22, 1925.

Alkyl formates are obtained by treating an alcohol with carbon monoxide at a high pressure and at a temperature of 60°–100° C. in the presence of a metal alcoholate. In an example, methanol containing dissolved sodium is heated in an autoclave to 80° C. and carbon monoxide passed in to a pressure of 200 atmospheres. Pure methyl formate is obtained and may be distilled off. Other examples are given in which ethyl and butyl alcohol are treated. The reaction is complete in a few minutes if a pressure of 1,000 atmospheres is employed, but is slower if the pressure is less.

252,870. Normal Butyl Esters of Amino-benzoic Acids. E. C. R. Marks, London. From The Abbott Laboratories, 4753, Ravenswood Avenue, Chicago, Ill., U.S.A. Application date, May 12, 1925.

The normal butyl ester of an amino-benzoic acid is obtained either by the direct action of a normal butyl halide on a metallic salt of the amino-benzoic acid, or by the reduction of an intermediate *n*-butyl-nitro-ester obtained by treating a normal butyl halide with a metallic salt of a nitro-benzoic acid. Examples are given of the production of *n*-butyl-para-amino-benzoate from sodium para-amino benzoate and *n*-butyl bromide, with a secondary amine as a catalyst; and the production of *n*-butyl-para-nitro benzoate from sodium para-nitro benzoate and *n*-butyl bromide, and subsequent reduction to *n*-butyl-para-amino benzoate.

252,903. Vat Colouring Matters of the Benzanthrone Series. J. Y. Johnson, London. From Badische Anilin and Soda Fabrik, Ludwigshafen-on-Rhine, Germany. Application date, June 11, 1925.

Amino derivatives of the dibenzanthrone series when treated with acylating agents produce different products according as diluents are present or not. The dyestuffs obtained by the use of diluents in this invention can be improved and their fastness increased by alkylating the products. In an example, amino-dibenzanthrone is mixed with benzoyl chloride and nitrobenzene and boiled. The dyestuff obtained is soluble in trichlorobenzene with a blue colour and in concentrated sulphuric acid with a reddish-violet colour. Several other examples are given.

252,922. Anthraquinone Derivatives, Manufacture of. British Dyestuffs Corporation, W. H. Perkin, A. W. Fyfe, and M. Mendoza, 70, Spring Gardens, Manchester. Application date, July 8, 1925.

1 : 4– and 1 : 8–diaminoanthraquinones are treated with formaldehyde bisulphite in the absence of mineral acids, to obtain *N*-methyl-omega-sulphonates. The base should be in a finely divided condition.

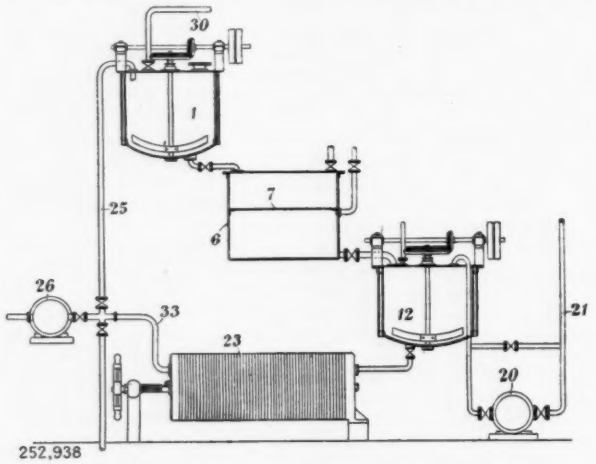
252,928. Highly Concentrated Sulphur Dioxide Gas, Manufacture of. S. G. S. Dicker, London. From K. Kudoh; Osaka, Japan. Application date, July 17, 1925.

The process makes use of the large quantities of oxygen obtained when water is electrolysed to obtain hydrogen, or

when nitrogen is obtained from liquid air. Sulphur or pyrites is burned in a mixture of sulphur dioxide and oxygen containing at least 22 per cent. of oxygen. The sulphur-bearing materials may be mixed with 10–30 per cent. of pyrites cinders, which increases the efficiency.

252,938. PURE SULPHUR, MANUFACTURE OF. J. Riley and Sons, Ltd., Manchester Road, Hapton, Burnley, Lancs, and W. H. Bentley, Lynton, Hapton, Burnley, Lancs. Application date, August 17, 1925.

Crude sulphur is dissolved in liquor from a previous operation to form a soluble polysulphide which is then treated with hydrogen sulphide to precipitate the sulphur. A jacketed pan 1 is charged with water, sodium sulphide and crude




sulphur, and the mixture agitated and heated to dissolve the sulphur. The solution is cooled to 40° C. by admitting cold water to the jacket and run into the vessel 6 having a filter 7. A fresh operation is then started in the pan 1, and the first solution is passed from the vessel 6 to another jacketed pan 12, where it is cooled to 10° C. Sulphuretted hydrogen is then forced by a pump 20 into the pan 12 to precipitate the sulphur, while the second charge is run into the vessel 6. The next charge of crude sulphur is placed in the pan 1, which is connected by pipes 25, 33, to the filter 23, and air is withdrawn by suction pump 26 while sulphuretted hydrogen is admitted through a pipe 30. The charge in the pan 12 is then passed through the filter press 23, and the excess of gas and the liquor pass on to the pan 1. The compressed gas in the pan 12 is returned through pipe 21 to the gas-holder, and the next charge of liquor is run into the pan 12 for treatment. The sulphur in the filter 23 is washed, and the washings passed into the pan 1, where the next operation is commenced.

252,953. CONCENTRATED PHOSPHORIC ACID, METHOD OF PRODUCING. F. G. Liljenroth, Eriksbergsgatan 14, Stockholm. Application date, September 22, 1925.

When phosphoric acid is produced by the reaction of high-temperature steam or gaseous phosphorus, it is necessary to use a large excess of steam, so that the phosphoric acid when condensed is weak. In this invention, the phosphoric acid is first condensed above 100° C., yielding an acid of 70 per cent. strength, comprising about 96 per cent. of the total phosphoric acid. The remaining steam is then condensed at a lower temperature. Part of the phosphorus passes through without being acted upon, and this is recovered in the second condensation. If this is effected in two stages, the first above 44° C., the phosphorus is recovered in a liquid state, and if the second is at as low a temperature as possible, the steam condenses, leaving the hydrogen as a dry gas. The condensation of the phosphoric acid is preferably effected by injecting water to reduce the temperature.

252,957. DIAZOTISABLE AZO DYESTUFFS AND INTERMEDIATE PRODUCTS, MANUFACTURE OF. Chemical Works, formerly Sandoz, Basle, Switzerland, and M. Böniger, 60, Fabrikstrasse, Basle, Switzerland. Application date, September 28, 1925.

$2^1$-methyl-$3^1$-nitro-$5^1$-sulpho-1-phenyl-5-pyrazolones are obtained by condensing 6-nitro-2-tolyl-hydrazine-4-sulphonic acid with ethyl-acetoacetate or ethyl-oxaloacetate and hydrolysing the products. The nitro-pyrazolones may be reduced to amino-pyrazolones. The dyestuffs are obtained by combining the intermediate product from one molecule of the tetrazo compound of a paradiamine of the diaryl series and one molecule of an aryl-ortho-oxycarboxylic acid with one molecule of $2^1$-methyl-$3^1$-amino-$5^1$-sulpho-1-phenyl-3-methyl-5-pyrazolone or one molecule of $2^1$-methyl-$3^1$-amino-$5^1$-sulpho-1-phenyl-5-pyrazolone-3-carboxylic acid. A number of examples are given.

NOTE.—Abstracts of the following specifications, which are now accepted, appeared in THE CHEMICAL AGE when they became open to objection under the International Convention :—231,841 (Consortium für Elektro-Chemische Industrie Ges.), relating to vinyl esters or ethers, see Vol. XII, p. 615; 243,361 (Farbenfabriken vorm. F. Bayer and Co.), relating to colloidal organic mercury compounds soluble in water, see Vol. XIV, p. 113.

## International Specifications not yet Accepted

250,909. DYES. I. G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. (Assignees of Chemische Fabrik Griesheim-Elektron, Frankfort-on-Main, Germany. International Convention date, April 18, 1925.) Addition to 235,169. (See THE CHEMICAL AGE, Vol. XIII, p. 158.)

Red to bluish-red dyestuffs suitable for dyeing indiarubber are obtained by coupling diazo compounds containing in the 2:5-positions substituents of which at least one is chlorine, with 2:3-oxynaphthoic-β-naphthalide.

250,910. ESTER MIXTURES. W. Claasen, 4, Hansaring, Cologne, Germany. International Convention date, April 14, 1925.

To obtain ester mixtures for use as camphor substitutes in celluloid manufacture, the oxidation products of hydrogenated crude cresols, which comprise a mixture of α-, β-, and γ-methyladipic acids together with lower homologues such as glutaric acid, are esterified as a whole with aliphatic, aromatic, or cyclic alcohols. Examples are given.

250,947. POLYMERISING OILS. G. Schicht Akt.-Ges., Aussig-on-Elbe, Czecho-Slovakia. International Convention date, April 14, 1925.

Oils such as linseed oil, Perilla oil, hempseed oil, varnishes, etc., are heated in a current of gas or steam to 300° C., until the iodine number of the liquid fatty acids remaining after separation of the saturated fatty acids has fallen to 90. The polymerised oils may be mixed with mineral oils or hydrocarbons to obtain lubricants.

250,948. HYDROGENATING OILS, ASPHALT, WAX, ETC. I. G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. International Convention date, April 15, 1925. Addition to 247,582.

Specification 247,582 (See THE CHEMICAL AGE, Vol. XIV, p. 461) describes the production of liquid hydrocarbons by treating carbonaceous solids in presence of nitrogen compounds with hydrogen, free or combined. This process is now applied to bitumens or products such as crude oil, shale oil, ozokerite, mineral pitch, cracked oils, and acid sludge. American crude oil residues are referred to in an example.

250,955. AROMATIC ALDEHYDES. I. G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. Assignees of Akt.-Ges. für Anilin Fabrikation, Treptow, Berlin. International Convention date, April 15, 1925.

To obtain aromatic aldehydes, an aralkylamine is heated with a halogenaryl compound such as dinitrochlorbenzene, 2-nitro-1-chlorbenzene-4-sulphonic acid, or 4-nitro-1-chlorbenzene-2-sulphonic acid, and the product oxidised in acid solution. In one example, for obtaining 2:4-dimethyl-benzaldehyde, the hydrochloride of 2:4-dimethyl-benzylamine is heated with sodium 4-nitro-1-chlorbenzene-2-sulphonate and sodium carbonate. The product, $2^1$:$4^1$-dimethyl-1-benzylamino-4-nitrobenzene-2-sulphonate, is dissolved in water and oxidised with sodium bichromate and sulphuric acid. Similar examples are given of the production of anisaldehyde, vanillin, 4-methyl-3-chlorbenzaldehyde, phenyl-acetaldehyde, and 1-naphthaldehyde.

250,956. TREATING CELLULOSE WASTE LIQUORS. I. G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany, assignees of Akt.-Ges. für Anilin Fabrikation, Treptow, Berlin. International Convention date, April 15, 1925.

Cellulose waste liquor is evaporated at a temperature above 100° C. or heated above 100° C. before evaporation to obtain non-hygroscopic products.

250,968. ANTHRAQUINONE DERIVATIVES. I. G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. Assignees of Farbenfabriken vorm. F. Bayer & Co., Leverkusen, near Cologne, Germany. International Convention date, April 17, 1925.

*p*-Diamino-anthrarufin-2 : 6- or 3 : 7-disulphonic acid and *p*-diamino-chrysazin-2:7-disulphonic acid are treated with aqueous formaldehyde, trioxymethylene, paraformaldehyde, or methylal to obtain the corresponding dimethyl-diamino compounds which are more stable than the parent materials, and dye wool in blue shades from an acid bath. One or both of the sulphonic groups can be split off by heating with alkaline sodium hydrosulphite, or with boric acid and sulphuric acid. The mono-sulphonic acids are greenish-blue dyes, and the unsulphonated bodies can be converted into vat dyes by acylation.

250,990. AMMONIUM SULPHATE AND SULPHUR. C. Harnist, 29, Rue Truffant, Paris. International Convention date, April 20, 1925.

Solutions containing ammonium polythionate, sulphite, bisulphite, thiosulphate, etc., are heated under pressure with steam to obtain ammonium sulphate and bisulphate. In an example, sulphur dioxide and ammonia are introduced into a saturator, and the excess of unabsorbed sulphur dioxide is recovered in a series of scrubbers, the first of which receives the acid sulphite from the saturator. Some of the liquor from the first scrubber is withdrawn and heated under pressure to obtain ammonium sulphate and bisulphate and free sulphur. The bisulphate is used to absorb excess ammonia from the saturator.

251,229. ORGANIC PHOSPHORUS COMPOUNDS. Soc. Chimique des Usines du Rhone, 21, Rue Jean Goujon, Paris. International Convention date, April 27, 1925.

A suspension of phosphoric anhydride in pyridine is added to a pyridine solution of glucose or laevulose and heated. Excess of pyridine is driven off, water is added and saturated with calcium carbonate or hydroxide. Calcium glucose or laevulose monophosphate is obtained. Calcium saccharose monophosphate and calcium lactose monophosphate are obtained in a similar manner.

251,244. CARBON AND SULPHUR. A. Lederer, XIII/9, Hermesvilla, Vienna. International Convention date, April 24, 1925.

A compound such as carbon disulphide is decomposed in a vessel part of which is heated to decomposition temperature, and part to a lower temperature but above the condensation temperature of the compound. Carbon is deposited in the hottest part, and sulphur at the cooler parts.

LATEST NOTIFICATIONS.

254,294. Process for preparing benzanthrone derivatives. I. G. Farbenindustrie Akt.-Ges. June 27, 1925.

254,302 Process for preventing the oxidation of magnesium and its alloys. I. G. Farbenindustrie Akt.-Ges. June 24, 1925.

254,310. Process for manufacturing nitrils of the perylene series. F. Bensa. June 26, 1925.

254,340. Manufacture of tetrahalogen-4 : 4¹-dimethyl-thioindigo. I. G. Farbenindustrie Akt.-Ges. June 27, 1925.

## Specifications Accepted with Date of Application

231,161. Dissolving cellulose esters and cellulose ethers. E. Pfiffner and M. Eschingen. March 24, 1924.

232,265. Perylene dyes, Production of. H. Pereira. April 10, 1924.

232,581. Ferric oxide, Manufacture of. Austral Pigments, Ltd. April 16, 1924.

235,862. New dyestuffs, Manufacture of. Soc. of Chemical Industry in Basle. June 17, 1924.

235,888. Treating rubber latex, Process of. American Rubber Co. June 18, 1924.

238,909. Distilling bituminous materials. H. Hutz. August 25, 1924.

239,178. Producing fatty acids from hydrocarbons. W. C. H. Pataky, and F. J. Nellensteijn. August 27, 1924.

241,232. Alkali aluminates, Process of producing. Rhenania Verein Chemischer Fabriken Akt.-Ges. October 13, 1924.

242,996. Transforming barium and strontium sulphates into other barium and strontium compounds. F. Rothe and H. Brenck. November 12, 1924.

244,747. Derivatives of pyridine-3-carboxylic acid. Soc. of Chemical Industry in Basle. December 20, 1924.

251,266. Dyestuffs capable of being chromed. Soc. of Chemical Industry in Basle. April 25, 1925.

251,293. Indigoid dyestuffs containing sulphur. Farbwerke vorm. Meister, Lucius, and Brüning. April 9, 1924.

253,305. Roasting or calcining ores consisting substantially of alkaline earth carbonates or iron carbonate. A. Apold and H. Fleissner. December 18, 1924.

253,584. Dyestuffs for acetate silk. Scottish Dyes, Ltd. E. G. Beckett, J. Thomas, and R. Tonkin. March 16, 1925. Addition to 231,206.

253,587. Concentration of ores. S. Tucker and Minerals Separation, Ltd. March 16, 1925.

253,618. Froth flotation apparatus. Minerals Separation, Ltd. (*Minerals Separation North American Corporation.*) March 20, 1925.

253,641. Apparatus for the cementation of iron or iron alloys. W. H. Fisher and P. Chambers. March 30, 1925.

253,659. Colouring matters, Production of. J. Y. Johnson. (*Badische Anilin and Soda Fabrik.*) April 16, 1925.

253,763. Monoazo dyestuffs or intermediate compounds for the manufacture of disazo or polyazo dyestuffs. A. G. Bloxam. (*Chemische Fabrik Griesheim-Elektron.*) September 23, 1925.

## Applications for Patents

Binz, A., and Rath, C. Production of organic arsenic compounds. 16,451. June 30. (Germany, July 22, 1925.)

Corn Products Refining Co. Production of dextrose. 16,475. June 30. (United States, January 17, 1925.)

Craig, T. J. I., and Spence and Sons, Ltd., P. Treatment of leucite, etc. 16,303. June 29.

Deutsche Gold- und Silber-Scheideanstalt vorm. Roessler. Stabilizing hydrocyanic acid. 16,704. July 3. (Germany, July 3, 1925.)

Dyk, L. A. van. Polymerized vinyl-chloride, etc. 16,335. June 29. (United States, July 21, 1925.)

Hooley, L. J., Scottish Dyes, Ltd., and Thomas, J. Production of colouring-matters. 16,683. July 2.

I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of colour lakes. 16,223. June 28.

I. G. Farbenindustrie Akt.-Ges. Manufacture of liquid products from carbonaceous materials. 16,222. June 28. (Germany, July 2, 1925.)

I. G. Farbenindustrie Akt.-Ges. Manufacture of tetrahalogen-4 : 4¹-dimethylthioindigos. 16,244. June 28. (Germany, June 27, 1925.)

I. G. Farbenindustrie Akt.-Ges. Emulsifying-agents. 16,646. July 2. (Germany, September 18, 1925.)

I. G. Farbenindustrie Akt.-Ges. Treating high percentage magnesium alloys. 16,664. July 2. (Germany, July 3, 1925.)

I. G. Farbenindustrie Akt.-Ges. Manufacture of dyestsffs. 16,671. July 2. (Germany, July 2, 1925.)

I. G. Farbenindustrie Akt.-Ges. Manufacture of hexa-substituted thioindigos. 16,674. July 2. (Germany, July 2, 1925.)

Jones, J. I. M., Kilby, W., and Standfast Dyers and Printers, Ltd. Dyes, etc. 16,270. June 28.

Lüdecke, K. Production of glycerine from sugar. 16,471. June 30.

McConnel, J. C. I. Separation of colloidally-suspended matter. 16,429. June 30.

May and Baker, Ltd. Manufacture of therapeutic preparations. 16,531. July 1.

Perry, W. A. Distillation of carbonaceous material. 16,434. June 30.

Rhenania Verein Chemischer Fabriken Akt.-Ges. Manufacture of moulded sulphur. 16,394. June 30. (Germany, February 3.)

Ring Ges. Chemischer Unternehmungen. Production of active silicic acid. 16,448. June 30. (Germany, July 1, 1925.)

Smith, S. C. Conversion of lead sulphate into lead carbonate. 16,365. June 29.

Smith, S. C. Treatment of lead chloride, etc. 16,670. July 2.

## Catalogue of Chemical Books

UNDER the title of "Catalogue of Science and Technology, No. III" (2s. 6d.), Henry Sotheran and Co., booksellers, of 43, Piccadilly, London, W.1, have issued Part VII of their annotated and classified list of rare and standard works on exact and applied science. The present part includes chemistry and chemical technology. Under chemistry are listed books on alchemy, iatro-chemistry, phlogistic chemistry, and most of the books of historical importance, besides modern standard works and sets of chemical journals: it includes also some books from the library of Sir Isaac Newton, some with his MS. annotations, and the original manuscript of Faraday's "Chemical Manipulations." The catalogue of chemical technology is systematically arranged according to subjects, and includes books on photography in general. The total number of books listed is nearly four thousand.

# Weekly Prices of British Chemical Products

*The prices and comments given below respecting British chemical products are based on direct information supplied by the British manufacturers concerned. Unless otherwise qualified, the figures quoted apply to fair quantities, net and naked at makers' works.*

## General Heavy Chemicals

ACID ACETIC, 40% TECH.—£19 per ton.

ACID BORIC, COMMERCIAL.—Crystal, £37 per ton, Powder, £39 per ton.

ACID HYDROCHLORIC.—3s. 9d. to 6s. per carboy d/d, according to purity, strength, and locality.

ACID NITRIC, 80° Tw.—£21 10s. to £27 per ton, makers' works, according to district and quality.

ACID SULPHURIC.—Average National prices f.o.r. makers' works, with slight variations up and down owing to local considerations; 140° Tw., Crude Acid, 60s. per ton. 168° Tw., Arsenical, £5 10s. per ton. 168° Tw., Non-arsenical, £6 15s. per ton.

AMMONIA ALKALI.—£6 15s. per ton f.o.r. Special terms for contracts.

BISULPHITE OF LIME.—£7 10s. per ton, packages extra, returnable.

BLEACHING POWDER.—Spot, £9 10s. d/d; Contract, £8 10s. d/d, 4-ton lots.

BORAX, COMMERCIAL.—Crystal, £23 per ton. Powder, £24 per ton. (Packed in 2-cwt. bags, carriage paid any station in Great Britain.)

CALCIUM CHLORATE (SOLID).—£5 12s. 6d. to £5 17s. 6d. per ton d/d, carr. paid.

COPPER SULPHATE.—£25 to £25 10s. per ton.

METHYLATED SPIRIT 64 O.P.—Industrial, 2s. 5d. to 2s. 11d. per gall. Mineralised, 3s. 8d. to 4s. per gall., in each case according to quantity.

NICKEL SULPHATE.—£38 per ton d/d.

NICKEL AMMONIA SULPHATE.—£38 per ton d/d.

POTASH CAUSTIC.—£30 to £33 per ton.

POTASSIUM BICHROMATE.—4½d. per lb.

POTASSIUM CHLORATE.—3½d. per lb., ex wharf, London, in cwt. kegs.

SALAMMONIAC.—£45 to £50 per ton d/d. Chloride of ammonia, £37 to £45 per ton, carr. paid.

SALT CAKE.—£3 15s. to £4 per ton d/d. In bulk.

SODA CAUSTIC, SOLID.—Spot lots delivered, £15 2s. 6d. to £18 per ton, according to strength: 20s. less for contracts.

SODA CRYSTALS.—£5 to £5 5s. per ton ex railway depots or ports.

SODIUM ACETATE 97/98%.—£21 per ton.

SODIUM BICARBONATE.—£10 10s. per ton, carr. paid.

SODIUM BICHROMATE.—3½d. per lb.

SODIUM BISULPHITE POWDER 60/62%.—£17 per ton for home market, 1-cwt. iron drums included.

SODIUM CHLORATE.—3d. per lb.

SODIUM NITRITE, 100% BASIS.—£27 per ton d/d.

SODIUM PHOSPHATE.—£14 per ton, f.o.r. London, casks free.

SODIUM SULPHATE (GLAUBER SALTS).—£3 12s. 6d. per ton.

SODIUM SULPHIDE CONC. SOLID, 60/65.—£13 5s. per ton d/d. Contract, £13. Carr. paid.

SODIUM SULPHIDE CRYSTALS.—Spot, £8 12s. 6d. per ton d/d. Contract, £8 10s. Carr. paid.

SODIUM SULPHITE, PEA CRYSTALS.—£14 per ton f.o.r. London, 1-cwt. kegs included.

## Coal Tar Products

ACID CARBOLIC CRYSTALS.—4½d. to 5d. per lb. Crude 60's, 1s. 5d. to 1s. 6d.

ACID CRESYLIC 97/99.—1s. 8d. to 1s. 10d. per gall. Pale, 95%, 1s. 6d. to 1s. 8d. per gall. Dark, 1s. 3d. to 1s. 6d. per gall. Steady.

ANTHRACENE.—A quality, 3d. to 4d. per unit.

ANTHRACENE OIL, STRAINED.—7d. to 8d. per gall. Unstrained, 6½d. to 7½d. per gall.

BENZOL.—Crude 65's, 1s. 3d. to 1s. 4d. per gall., ex works in tank wagons. Standard Motor, 2s. per gall., ex works in tank wagons. Pure, 1s. 10½d. to 2s. 9d. per gall., ex works in tank wagons.

TOLUOL.—90%, 1s. 9½d. to 2s. 3d. per gall. Pure, 2s. 3d. to 2s. 9d. per gall.

XYLOL.—2s. 4d. to 2s. 9d. per gall. Pure, 3s. 3d. per gall.

CREOSOTE.—Cresylic, 20/24%, 9d. to 10d. per gall. Standard specification, middle oil, 6½d. to 7¼d. per gall. Heavy, 7¼d. to 8½d. per gall.

NAPHTHA.—Crude, 9½d. to 1s. 0½d. per gall. according to quality. Solvent 90/160, 2s. to 2s. 3d. per gall. Solvent 90/190, 1s. 3d. to 1s. 4d. per gall.

NAPHTHALENE CRUDE.—Drained Creosote Salts, £3 10s. to £5 per ton. Whizzed or hot pressed, £5 10s. to £7 10s.

NAPHTHALENE.—Crystals and Flaked, £11 10s. to £13 per ton, according to districts.

PITCH.—Medium soft, 80s. to 82s. 6d. per ton.

PYRIDINE.—90/140, 17s. to 20s. per gall. Heavy, 7s. to 10s. per gall.

## Intermediates and Dyes

In the following list of Intermediates delivered prices include packages except where otherwise stated.

ACID AMIDONAPHTHOL DISULPHO (1-8-2-4).—10s. 9d. per lb.

ACID ANTHRANILIC.—6s. 6d. per lb. 100%.

ACID BENZOIC.—1s. 9d. per lb.

ACID GAMMA.—8s. per lb.

ACID H.—3s. 3d. per lb. 100% basis d/d.

ACID NAPHTHIONIC.—2s. 2d. per lb. 100% basis d/d.

ACID NEVILLE AND WINTHER.—4s. 9d. per lb. 100% basis d/d.

ACID SULPHANILIC.—9d. per lb. 100% basis d/d.

ANILINE OIL.—7d. per lb. naked at works.

ANILINE SALTS.—7d. to 7½d. per lb. naked at works.

BENZALDEHYDE.—2s. 1d. per lb.

BENZIDINE BASE.—3s. 3d. per lb. 100% basis d/d.

*o*-CRESOL 29/31° C.—3d. to 3½d. per lb.

*m*-CRESOL 98/100%.—2s. 1d. to 2s. 3d. per lb.

*p*-CRESOL 32/34° C.—2s. 1d. to 2s. 3d. per lb.

DICHLORANILINE.—2s. 3d. per lb.

DIMETHYLANILINE.—1s. 11d. to 2s. per lb. d/d. Drums extra.

DINITROBENZENE.—9d. per lb. naked at works.

DINITROCHLORBENZENE.—£84 per ton d/d.

DINITROTOLUENE.—48/50° C. 8d. per lb. naked at works. 66/68° C. 9d. per lb. naked at works.

DIPHENYLANILINE.—2s. 10d. per lb. d/d.

*a*-NAPHTHOL.—2s. per lb. d/d.

*B*-NAPHTHOL.—11d. to 1s. per lb. d/d.

*a*-NAPHTHYLAMINE.—1s. 3d. per lb. d/d.

*B*-NAPHTHYLAMINE.—3s. 2d. per lb. d/d.

*o*-NITRANILINE.—5s. 9d. per lb.

*m*-NITRANILINE.—3s. 3d. per lb. d/d.

*p*-NITRANILINE.—1s. 9d. per lb. d/d.

NITROBENZENE.—5d. per lb. naked at works.

NITRONAPHTHALENE.—10d. per lb. d/d.

R. SALT.—2s. 4d. per lb. 100% basis d/d.

SODIUM NAPHTHIONATE.—1s. 9d. per lb. 100% basis d/d.

*o*-TOLUIDINE.—8d. per lb. naked at works.

*p*-TOLUIDINE.—2s. 2d. per lb. naked at works.

*m*-XYLIDINE ACETATE.—2s. 11d. per lb. 100%.

## Wood Distillation Products

ACETATE OF LIME.—Brown, £8. Grey, £17 10s. per ton. Liquor, 9d. per gall. 32° Tw.

CHARCOAL.—£7 to £9 per ton, according to grade and locality.

IRON LIQUOR.—1s. 6d. per gall. 32° Tw. 1s. 2d. per gall., 24° Tw.

RED LIQUOR.—9½d. to 1s. per gall.

WOOD CREOSOTE.—2s. 9d. per gall. Unrefined.

WOOD NAPHTHA, MISCIBLE.—3s. 6d. per gall. 60% O.P. Solvent, 3s. 6d. per gall. 40% O.P.

WOOD TAR.—£3 to £5 per ton, according to grade.

BROWN SUGAR OF LEAD.—£39 to £40 per ton.

## Rubber Chemicals

ANTIMONY SULPHIDE.—Golden, 6d. to 1s. 5d. per lb., according to quality, Crimson, 1s. 3d. to 1s. 7½d. per lb., according to quality.

ARSENIC SULPHIDE, YELLOW.—2s. per lb.

BARYTES.—£3 10s. to £6 15s. per ton, according to quality.

CADMIUM SULPHIDE.—2s. 9d. per lb.

CARBON BISULPHIDE.—£20 to £25 per ton, according to quantity.

CARBON BLACK.—5½d. per lb., ex wharf.

CARBON TETRACHLORIDE.—£46 to £55 per ton, according to quantity, drums extra.

CHROMIUM OXIDE, GREEN.—1s. 2d. per lb.

DIPHENYLGUANIDINE.—3s. 9d. per lb.

INDIARUBBER SUBSTITUTES, WHITE AND DARK.—5½d. to 6½d. per lb.

LAMP BLACK.—£35 per ton, barrels free.

LEAD HYPOSULPHITE.—9d. per lb.

LITHOPONE, 30%.—£22 10s. per ton.

MINERAL RUBBER "RUBPRON."—£13 12s. 6d. per ton f.o.r. London.

SULPHUR.—£9 to £11 per ton, according to quality.

SULPHUR CHLORIDE.—4d. per lb., carboys extra.

SULPHUR PRECIP. B.P.—£47 10s. to £50 per ton.

THIOCARBAMIDE.—2s. 6d. to 2s. 9d. per lb. carriage paid.

THIOCARBANILIDE.—2s. 1d. to 2s. 3d. per lb.

VERMILION, PALE OR DEEP.—5s. 3d. per lb.

ZINC SULPHIDE.—1s. 1d. per lb.

## Pharmaceutical and Photographic Chemicals

**Acid, Acetic**, 80% B.P.—£39 per ton ex wharf London in glass containers.

**Acid, Acetyl Salicylic.**—2s. 4d. to 2s. 5d. per lb. Brisk demand.

**Acid, Benzoic** B.P.—2s. to 2s. 3d. per lb., according to quantity.

**Acid, Boric** B.P.—Crystal, £43 per ton; Powder, £47 per ton. Carriage paid any station in Great Britain, in ton lots.

**Acid, Camphoric.**—19s. to 21s. per lb.

**Acid, Citric.**—1s. 4d to 1s. 4½d. per lb., less 5%.

**Acid, Gallic.**—2s. 8d. per lb. for pure crystal, in cwt. lots.

**Acid, Pyrogallic, Crystals.**—6s. 7d. per lb. Resublimed, 7s. 3d.

**Acid, Salicylic.**—1s. 4d. to 1s. 5d. per lb. Technical.—10¾d. to 11d. per lb.

**Acid, Tannic** B.P.—2s. 10d. per lb.

**Acid, Tartaric.**—1s. 0½d. per lb., less 5%. Market firm.

**Amidol.**—8s. 6d. per lb., d/d.

**Acetanilide.**—1s. 7d. to 1s. 8d. per lb. for quantities.

**Amidopyrin.**—12s. 6d. per lb.

**Ammonium Benzoate.**—3s. 3d. to 3s. 6d. per lb., according to quantity.

**Ammonium Carbonate** B.P.—£37 per ton. Powder, £39 per ton in 5 cwt. casks.

**Atropine Sulphate.**—11s. per oz. for English make.

**Barbitone.**—9s. per lb.

**Benzonaphthol.**—3s. 3d. per lb. spot.

**Bismuth Carbonate.**—12s. 6d. to 14s. 3d. per lb.

**Bismuth Citrate.**—9s. 6d. to 11s. 3d. per lb.

**Bismuth Salicylate.**—10s. 3d. to 12s. per lb.

**Bismuth Subnitrate.**—10s. 9d. to 12s. 6d. per lb. according to quantity.

**Borax** B.P.—Crystal, £27; Powder, £28 per ton. Carriage paid any station in Great Britain, in ton lots.

**Bromides.**—Potassium, 1s. 9d. to 1s. 11d. per lb.; sodium, 1s. 11d. to 2s. 2d. per lb.; ammonium, 2s. 2d. to 2s. 5d. per lb., all spot.

**Calcium Lactate.**—1s. 3d. to 1s. 4d.

**Chloral Hydrate.**—3s. 3d. to 3s. 6d. per lb., duty paid.

**Chloroform.**—2s. 3d. to 2s. 7½d. per lb., according to quantity.

**Creosote Carbonate.**—6s. per lb.

**Formaldehyde.**—£40 per ton, in barrels ex wharf.

**Guaiacol Carbonate.**—7s. 6d. per lb.

**Hexamine.**—2s. 4d. to 2s. 6d. per lb.

**Homatropine Hydrobromide.**—30s. per oz.

**Hydrastine Hydrochloride.**—English make offered at 120s. per oz.

**Hydrogen Peroxide** (12 vols.).—1s. 8d. per gallon f.o.r. makers' works, naked.

**Hydroquinone.**—4s. 3d. per lb., in cwt. lots.

**Hypophosphites.**—Calcium, 3s. 6d. per lb., for 28-lb. lots; potassium, 4s. 1d. per lb.; sodium, 4s. per lb.

**Iron Ammonium Citrate** B.P.—2s. to 2s. 3d. per lb. Green, 2s. 4d. to 2s. 9d. per lb. U.S.P., 2s. 1d. to 2s. 4d. per lb.

**Iron Perchloride.**—20s. to 22s., according to quantity.

**Magnesium Carbonate.**—Light Commercial, £31 per ton net.

**Magnesium Oxide.**—Light Commercial, £67 10s. per ton, less 2½%, price reduced; Heavy Commercial, £22 per ton, less 2½%; Heavy Pure, 2s. to 2s. 3d. per lb., according to quantity.

**Menthol.**—A.B.R. recrystallised B.P., 18s. net per lb., Synthetic, 12s. 6d. to 15s. per lb., according to quality.

**Mercurials.**—Red oxide, 5s. 11d. to 6s. 1d. per lb.; Corrosive sublimate, 4s. 3d. to 4s. 5d. per lb.; white precipitate, 4s. 9d. to 4s. 11d. per lb.; Calomel, 4s. 6d. to 4s. 8d. per lb.

**Methyl Salicylate.**—1s. 7d. per lb.

**Methyl Sulphonal.**—16s. 6d. per lb.

**Metol.**—10s. per lb. British make.

**Paraformaldehyde.**—1s. 9d. for 100% powder.

**Paraldehyde.**—1s. 4d. per lb. (1s. 2d. in carboys.)

**Phenacetin.**—4s. per lb.

**Phenazone.**—6s. per lb.

**Phenolphthalein.**—4s. per lb.

**Potassium Bitartrate** 99/100% (Cream of Tartar).—80s. per cwt., less 2½% for ton lots.

**Potassium Citrate.**—2s. to 2s. 1d. per lb.

**Potassium Ferricyanide.**—1s. 9d. per lb. in cwt. lots. Quiet.

**Potassium Iodide.**—16s. 8d. to 17s. 2d. per lb., according to quantity.

**Potassium Metabisulphite.**—6d. per lb., 1-cwt. kegs included, f.o.r. London.

**Potassium Permanganate.**—B.P. crystals, 6½d. per lb., spot.

**Quinine Sulphate.**—1s. 8d. to 1s. 9d. per oz., in 100 oz. tins.

**Resorcin.**—4s. to 5s. per lb., spot.

**Saccharin.**—55s. per lb.

**Salol.**—3s. per lb.

**Sodium Benzoate**, B.P.—1s. 10d. to 2s. 2d. per lb.

**Sodium Citrate**, B.P.C., 1911.—1s. 8d. to 1s. 11d. per lb., B.P.C., 1923. 2s. to 2s. 2d. per lb., according to quantity.

**Sodium Ferrocyanide.**—4d. per lb. carriage paid.

**Sodium Hyposulphite, Photographic.**—£15 5s. per ton, d/d consignee's station in 1-cwt. kegs.

**Sodium Nitroprusside.**—16s. per lb.

**Sodium Potassium Tartrate** (Rochelle Salt).—75s. to 80s. per cwt., according to quantity.

**Sodium Salicylate.**—Powder, 1s. 9d. to 1s. 10d. per lb. Crystal, 1s. 10d. to 1s. 11d. per lb.

**Sodium Sulphide, pure recrystallised.**—10d. to 1s. 2d. per lb.

**Sodium Sulphite, anhydrous,** £27 10s. to £28 10s. per ton, according to quantity; 1-cwt. kegs included.

**Sulphonal.**—11s. per lb.

**Tartar Emetic**, B.P.—Crystal or Powder, 1s. 11d. to 2s. per lb.

**Thymol.**—12s. to 13s. 9d. per lb.

## Perfumery Chemicals

**Acetophenone.**—10s. per lb.

**Aubepine** (ex Anethol).—10s. per b.

**Amyl Acetate.**—3s. per lb.

**Amyl Butyrate.**—5s. 6d. per lb.

**Amyl Salicylate.**—3s. 3d. per lb.

**Anethol** (M.P. 21/22° C.).—5s. 9d. per lb.

**Benzyl Acetate from Chlorine-free Benzyl Alcohol.**—2s. 3d. per lb.

**Benzyl Alcohol free from Chlorine.**—2s. 3d. per lb.

**Benzaldehyde free from Chlorine.**—2s. 6d. per lb.

**Benzyl Benzoate.**—2s. 9d. per lb.

**Cinnamic Aldehyde Natural.**—20s. per lb.

**Coumarin.**—11s. 9d. per lb.

**Citronellol.**—15s. per lb.

**Citral.**—9s. 6d. per lb.

**Ethyl Cinnamate.**—10s. per lb.

**Ethyl Phthalate.**—3s. per lb.

**Eugenol.**—10s. per lb.

**Geraniol** (Palmarosa).—20s. per lb.

**Geraniol.**—6s. 3d. to 11s. 6d. per lb.

**Heliotropine.**—5s. 9d. per lb.

**Iso Eugenol.**—14s. per lb.

**Linalol.**—14s. to 17s. 6d. per lb.

**Linalyl Acetate.**—17s. to 20s. per lb.

**Methyl Anthranilate.**—9s. 3d. per lb.

**Methyl Benzoate.**—5s. per lb.

**Musk Ketone.**—34s. 6d. per lb.

**Musk Xylol.**—8s. per lb.

**Nerolin.**—4s. per lb.

**Phenyl Ethyl Acetate.**—12s. per lb.

**Phenyl Ethyl Alcohol.**—9s. 6d. per lb.

**Rhodinol.**—27s. 6d. per lb.

**Safrol.**—1s. 7½d. per lb.

**Terpineol.**—1s. 6d. per lb.

**Vanillin.**—21s. 6d. to 23s. per lb.

## Essential Oils

**Almond Oil.**—11s. 6d. per lb.

**Anise Oil.**—3s. per lb.

**Bergamot Oil.**—28s. 6d. per lb.

**Bourbon Geranium Oil.**—11s. per lb.

**Camphor Oil.**—60s. per cwt

**Cananga Oil, Java.**—20s. per lb.

**Cinnamon Oil, Leaf.**—6d. per oz.

**Cassia Oil**, 80/85%.—9s. per lb.

**Citronella Oil.**—Java, 85/90%, 2s. 8d. Ceylon, 2s. per lb.

**Clove Oil.**—7s. per lb.

**Eucalyptus Oil**, 70/75%.—1s. 10d. per lb.

**Lavender Oil.**—French 38/40%, Esters, 15s. 6d. per lb.

**Lemon Oil.**—7s. 9d. per lb.

**Lemongrass Oil.**—4s. 6d. per lb.

**Orange Oil, Sweet.**—11s. 9d. per lb.

**Otto of Rose Oil.**—Bulgarian, 65s. per oz. Anatolian, 30s. per oz.

**Palma Rosa Oil.**—10s. 6d. per lb.

**Peppermint Oil.**—Wayne County, 67s. 6d. per lb. Japanese, 9s. 6d. per lb.

**Petitgrain Oil.**—9s. per lb.

**Sandal Wood Oil.**—Mysore, 26s. per lb. Australian, 17s. 3d. per lb.

# London Chemical Market

*The following notes on the London Chemical Market are specially supplied to* THE CHEMICAL AGE *by Messrs. R. W. Greeff & Co., Ltd., and Messrs. Chas. Page & Co., Ltd., and may be accepted as representing these firms' independent and impartial opinions.*

*London, July* 8, 1926.

THE market remains lifeless and little improvement is to be expected whilst the present industrial situation obtains. Prices are surprisingly steady having regard to the existing conditions. A certain business is passing for export, but the volume of trade leaves much to be desired.

### General Chemicals

ACETONE is in only moderate inquiry. Price £80 to £82 per ton.

ACID ACETIC has been in better demand, technical 80% being quoted at £37 to £39 per ton and pure at £1 per ton extra.

ACID FORMIC is in fair demand, price unchanged.

ACID LACTIC is quiet at £43 per ton for 50% by weight.

ACID OXALIC is lifeless. Price is very firm at about 3¾d. per lb.

ACID TARTARIC is quietly steady at 11½d. per lb.

ALUMINA SULPHATE is in fair demand, and is quoted at £5 10s. per ton for 17/18%.

AMMONIUM CHLORIDE is stagnant. Price nominally £18 to £19 per ton.

ARSENIC demand is practically non-existent. Price of £13 10s. to £14 per ton can be shaded for quantities.

BARIUM CHLORIDE.—Unchanged at about £10 per ton.

EPSOM SALTS are a firm market at recent levels.

FORMALDEHYDE.—The improvement in price has been maintained, and demand is better than it has been for some time.

IRON SULPHATE continues in good demand, price unchanged.

LEAD ACETATE is in fair demand, price about £45 10s. per ton for white and £44 to £45 per ton for brown.

METHYL ALCOHOL is in fair inquiry at £48 to £50 per ton for good grade material.

METHYL ACETONE is lower in price at £52 10s. per ton.

POTASSIUM CARBONATE.—The market is uninteresting.

POTASSIUM CHLORATE is in fair demand ; price is 3½d. per lb.

POTASSIUM PERMANGANATE is quiet, and is quoted at 7d. per lb. for B.P. grade.

POTASSIUM PRUSSIATE is particularly firm, although demand is only small. Price is 7d. to 7¼d. per lb.

SODIUM ACETATE is very scarce for early delivery, and is quoted £22 to £23 per ton.

SODIUM BICHROMATE is in good demand, English makers' price remaining unchanged.

SODIUM NITRITE is quiet, and is quoted about £20 10s. per ton.

SODIUM PHOSPHATE.—Unchanged.

SODIUM PRUSSIATE is quietly steady at 3¾d. per lb.

SODIUM SULPHIDE.—Unchanged.

ZINC SULPHATE.—Unchanged.

### Coal Tar Products

Owing to the continuance of the coal strike, prices quoted are in all cases more or less nominal.

90's BENZOL.—There are no quotations, except for continental material. The price asked is 2s. 2d. per gallon, f.o.b. continental port, naked.

PURE BENZOL is unobtainable.

CREOSOTE OIL is considerably firmer ; the price is 7d. per gallon, on rails in the Provinces. In London the price for spot parcels is steady at 7½d. per gallon at makers' works. There are few offers.

CRESYLIC ACID is in very great demand, both as regards the pale and dark qualities. The price for the improved 99/100% quality is 2s. 3d. per gallon on rails, while the dark quality is quoted at 1s. 11d. to 2s. per gallon on rails.

SOLVENT NAPHTHA.—There are a few parcels available at 1s. 10d. per gallon on rails at makers' works.

HEAVY NAPHTHA is in good demand at 1s. 4d. to 1s. 5d. per gallon on rails for the few parcels offered.

NAPHTHALENES are slightly better in the higher grades ; 76/78 quality is worth about £6 15s. per ton, and 74/76 quality about £5 15s. at makers' works.

## Latest Oil Prices

LONDON.—LINSEED OIL firm. Spot, £34 5s., ex mill ; July-August, £33 5s. ; September-December, £33 10s. ; January-April, £34. RAPE OIL nominal. Crude extracted, £49 naked ; Japanese crude, July-August, shipment, £46 ; refined, £49, barrels. COTTON OIL quiet. Refined common edible, £46 ; Egyptian crude, £40 ; deodorized, £48. TURPENTINE quiet and 3d. to 6d. per cwt. lower. American, spot, 63s. 6d. ; and July-December, 59s.

HULL.—LINSEED OIL. Spot to September-December, £33 15s. ; January-April, £34 per ton, naked. COTTON OIL.—Bombay crude £36 12s. 6d. ; Egyptian crude, £39 10s. ; edible refined, £44 ; technical, £39 10s. per ton, naked. PALM KERNEL OIL.—Crushed, 5½ per cent., £43 10s., naked. GROUNDNUT OIL.—Crushed/extracted, £47 ; deodorised, £51. SOYA OIL.—Extracted and crushed, £38 ; deodorised, £41 10s. RAPE OIL.—Crude extracted, £48 ; refined, £50 per ton, net cash terms, ex mill. CASTOR OIL and COD OIL unchanged.

## Nitrogen Products

*Export.*—During the summer months the demand for sulphate of ammonia is usually sluggish. At present there is very little interest in either prompt or forward position. As far as British producers are concerned, they are only able to sell from hand to mouth and small lots have changed hands on the basis of £10 15s. per ton, f.o.b. U.K. port in single bags. It is understood that forward sales for large quantities for the Far East have been made from the Continent. The shortage of production in this country has prevented British sellers from taking an interest in the forward positions.

*Home.*—It is now understood that the British producers will not fix any summer price until the coal stoppage has definitely been terminated. In the meantime the March/May prices continue in operation, but only a small amount of business is being done on this basis. Normally the purchases for June/August are largely stored by buyers for consumption in the winter months. The effect of the continuation of the March/May prices is simply to postpone such purchases.

*Nitrate of Soda.*—The nitrate position remains unchanged. Usual shipments are being made from Chile with prices based on the scale figures. The negotiations of the Chilian producers with the Chilian Government are still in operation and the outcome is awaited with interest. The intervening period is obviously one of dullness.

## Nitrate Prospects

AT the thirty-seventh annual general meeting of the San Sebastian Nitrate Co., Ltd., on Thursday, July 1, the chairman, Mr. H. W. Morrison, made some reference to the prospects of the nitrate industry. He said that when he last addressed the shareholders he touched on the question of the competition of synthetic products and sulphate of ammonia. Although at that time there was an increasing demand for these products, there was also an increasing demand on a somewhat smaller scale for the Chilian nitrate of soda. The competitive products had always been sold at a lower price, and for that reason made headway. It then seemed reasonable to suppose that the normal production of Chilian nitrate of soda would again be absorbed, and that sales would be more or less on the same scale as the previous year, if, indeed, that year's figures were not exceeded. In the early spring, however, a change came over the situation, and there was a decrease in sales. The main reason, he thought, could be assigned to the fall of the franc in France and Belgium, both large consumers of Chilian nitrate of soda. It was hardly to be expected that these countries, with their depreciated currency, could afford to buy on a sterling basis. Recognising that some step would have to be taken to meet the competition of other fertilisers in the coming season, the Nitrate Producers' Association had fixed the prices of Chilian nitrate for delivery from June, 1926, to May, 1927, at 1s. per metric quintal less than those ruling for last year. It now remained to be seen whether the Chilian Government, which took such a large share of the profits in the shape of an import duty on bags, coal, oil, an export duty of 52s. 6d. per ton on the nitrate as shipped, not to mention income-tax, etc., would come to the assistance of the industry at this crisis and make a reduction in the export duty to balance the reduction already made in the selling price by the Association.

THE ANGLO-PERSIAN OIL CO. has just given one of the largest orders ever placed in Great Britain, the value amounting to some £265,000. It includes 34 miles of 12-in. line pipe, 56 miles of 10-in. line pipe, 958 miles of casing, a combined weight of 14,000 tons. Over 1,000 men will be directly employed for three months in the manufacture of the line pipe, while the making of the casing will employ 800 men for one and a half months and 400 men for four months. In addition, 1,450 men will be engaged for one and a half months in the manufacture of the steel required, and subsidiary services will entail the employment of 1,200 men for one month. The total number of men employed will therefore be 4,850. The orders have been placed with Stewart and Lloyds, of Glasgow, and British Mannesmann.

# Scottish Chemical Market

***The following notes on the Scottish Chemical Market are specially supplied to* THE CHEMICAL AGE *by Messrs. Charles Tennant and Co., Ltd., Glasgow, and may be accepted as representing the firm's independent and impartial opinions.***

*Glasgow, July 8, 1926.*

THE continuance of the coal trouble is having a more marked effect on the heavy chemical market, and although there is a moderate amount of inquiry, quantities asked for are small. Notwithstanding the absence of demand, prices remain steady, holders of stocks being apparently of opinion that the trouble cannot be much further prolonged. Some of the coal tar products are practically unobtainable at home, and some parcels are coming in from the Continent.

### Industrial Chemicals

ACID ACETIC, 98/100%.—£55 to £67 per ton, according to quantity and packing, c.i.f. U.K. port; 80% pure, £39 to £41 per ton; 80% technical, £38 to £39 per ton.

ACID BORIC.—Crystal, granulated or small flakes, £37 per ton; powdered, £39 per ton, packed in bags, carriage paid U.K. stations.

ACID CARBOLIC, ICE CRYSTALS.—In moderate demand, and quoted price unchanged at 4¾d. per lb., delivered or f.o.b. U.K. port.

ACID CITRIC, B.P. CRYSTALS.—In usual steady demand, and price unchanged at about 1s. 3½d. per lb., less 5% ex store. Quoted 1s. 3⅝d. per lb., less 5% ex wharf, early delivery.

ACID FORMIC, 85%.—Offered from the continent at about £51 per ton, c.i.f. U.K. ports. Spot material quoted £52 10s. per ton, ex wharf.

ACID HYDROCHLORIC.—In little demand. Price 6s. 6d. per carboy, ex works.

ACID NITRIC, 80%.—Usual steady demand, and price unchanged at £23 5s. per ton, ex station, full truck loads.

ACID OXALIC, 98/100%.—Remains unchanged at about 3½d. per lb., ex store. Offered for early delivery from the continent at 3⅜d. per lb., ex wharf.

ACID SULPHURIC.—144°, £3 12s. 6d. per ton; 168°, £7 per ton, ex works, full truck loads. Dearsenicated quality, 20s. per ton more.

ACID TARTARIC, B.P. CRYSTALS.—Spot material quoted 11¾d. per lb., less 5% ex wharf, or 11½d. per lb., less 5% ex wharf, prompt shipment.

ALUMINA SULPHATE, 17/18%, IRON FREE.—On offer from the continent at about £5 8s. 6d. per ton, c.i.f. U.K. ports. Spot material quoted £6 5s. per ton, ex store.

ALUM, LUMP POTASH.—Spot material unchanged at about £9 5s. per ton, ex store. Quoted £8 per ton, c.i.f. U.K. ports, prompt shipment. Crystal powder. On offer at about £7 15s. per ton, c.i.f. U.K. ports. Spot material available at £8 7s. 6d. per ton, ex store.

AMMONIA ANHYDROUS.—Imported material selling at about 11¼d. to 11½d. per lb., ex wharf, containers extra and returnable.

AMMONIA CARBONATE.—Lump, £37 per ton; powdered, £39 per ton, packed in 5 cwt. casks, delivered or f.o.b. U.K. ports.

AMMONIA LIQUID, 880°.—Unchanged at about 2½d. to 3d. per lb., delivered according to quantity.

AMMONIA MURIATE.—Grey galvanisers' crystals of British manufacture quoted £23 10s. to £25 10s. per ton, ex station. Continental on offer at about £21 10s. per ton, c.i.f. U.K. ports. Fine white crystals of continental manufacture quoted £18 5s. per ton, c.i.f. U.K. ports.

ARSENIC, WHITE POWDERED.—Spot material unchanged at about £16 5s. per ton, ex store. Offered for prompt shipment from mines at about £15 10s. per ton, ex wharf.

BARIUM CARBONATE, 98/100%.—White powdered quality quoted £6 15s. per ton, c.i.f. U.K. ports.

BARIUM CHLORIDE, 98/100%.—Spot material unchanged at about £10 10s. per ton, ex store. Offered from the continent at about £9 5s. per ton, c.i.f. U.K. ports.

BLEACHING POWDER.—English material unchanged at £9 10s. per ton, ex station; contracts 20s. per ton less. Continental now quoted £7 15s. per ton, c.i.f. U.K. ports.

BARYTES.—English material unchanged at £5 5s. per ton, ex works. Continental quoted £5 per ton, c.i.f. U.K. ports.

BORAX.—Granulated, £22 10s. per ton; crystals, £23 per ton; powdered, £24 per ton, carriage paid U.K. stations.

CALCIUM CHLORIDE.—English manufacture, price unchanged at £5 12s. 6d. to £5 17s. 6d. per ton, ex station. Continental on offer at about £3 17s. 6d. per ton, c.i.f. U.K. ports.

COPPERAS, GREEN.—Quoted £3 10s. per ton, f.o.r. works. Moderate inquiry for export, and price about £4 2s. 6d. per ton, f.o.b. U.K. ports.

COPPER SULPHATE, 99/100%.—Continental material on offer at about £22 10s. per ton, ex wharf. English material for export quoted £23 5s. per ton, f.o.b. U.K. ports.

FORMALDEHYDE, 40%.—Quoted £38 10s. per ton, c.i.f. U.K. ports. Spot material available at £40 per ton, ex store.

GLAUBER SALTS.—English material unchanged at £4 per ton, ex store or station. Continental quoted £3 per ton, c.i.f. U.K. ports.

LEAD, RED.—Imported material unchanged at about £37 10s. per ton, ex store.

LEAD, WHITE.—On offer at £38 10s. per ton, ex store.

LEAD ACETATE.—White crystals quoted £45 per ton, c.i.f. U.K. ports, prompt shipment. Brown, about £40 10s. per ton, c.i.f. U.K. ports.

MAGNESITE, GROUND CALCINED.—Quoted £8 10s. per ton, ex store, in moderate demand.

POTASH CAUSTIC, 88/92%.—Syndicate prices vary from £25 10s. to £28 15s. per ton, c.i.f. U.K. ports, according to quantity and destination. Spot material available at about £29 per ton, ex store.

POTASSIUM BICHROMATE.—Unchanged at 4½d. per lb., delivered.

POTASSIUM CARBONATE, 96/98%.—Quoted £25 5s. per ton, ex wharf, early delivery. Spot material on offer at £26 10s. per ton, ex store; 90/94% quality quoted £22 5s. per ton, c.i.f. U.K. ports.

POTASSIUM CHLORATE, 98/100%.—Powdered on offer at £26 15s. per ton, c.i.f. U.K. ports; crystals, £28 per ton, c.i.f. U.K. ports.

POTASSIUM NITRATE (SALTPETRE).—Unchanged at about £22 5s. per ton, c.i.f. U.K. ports. Spot material available at £24 per ton, ex store.

POTASSIUM PERMANGANATE, B.P. CRYSTALS.—Quoted 7½d. per lb., ex store, spot delivery. To come forward 7d. per lb., ex wharf.

POTASSIUM PRUSSIATE, YELLOW.—Quoted 7½d. per lb., ex wharf.

SODA CAUSTIC.—76/77%, £17 10s. per ton; 70/72%, £16 2s. 6d. per ton; broken, 60%, £16 12s. 6d. per ton; powdered, 98/99%, £20 17s. 6d. per ton. All carriage paid U.K. stations, spot delivery. Contracts 20s. per ton less.

SODIUM ACETATE.—English material quoted £22 per ton, ex station. Continental on offer at about £20 10s. per ton, ex store, or to come forward £19 15s. per ton, c.i.f. U.K. ports.

SODIUM BICARBONATE.—Refined recrystallised quality, £10 10s. per ton, ex quay or station. M.W. quality 30s. per ton less.

SODIUM BICHROMATE.—English price unchanged at 3½d. per lb., delivered.

SODIUM CARBONATE (SODA CRYSTALS).—£5 to £5 5s. per ton, ex quay or station. Powdered or pea quality £1 7s. 6d. per ton more (alkali 58%), £8 12s. 3d. per ton, ex quay or station.

SODIUM HYPOSULPHITE OF SODA.—Large crystals of English manufacture quoted £9 per ton, ex store. Minimum four ton lots. Pea crystals, £14 10s. per ton, ex station. Continental on offer at about £7 12s. 6d. per ton, c.i.f. U.K. ports.

SODIUM NITRATE.—Quoted £13 per ton, ex store; 96/98% refined quality, 7s. 6d. per ton extra.

SODIUM NITRITE, 100%.—Quoted £24 per ton, ex store. Offered from the continent at about £22 5s. per ton, c.i.f. U.K. ports.

SODIUM PRUSSIATE, YELLOW.—Offered for early delivery at 4d. per lb., ex wharf. Spot material quoted 4¼d. per lb., ex store.

SODIUM SULPHATE, SALTCAKE.—Price for home consumption, £3 10s. per ton, ex works. Good inquiry for export and higher prices obtainable.

SODIUM SULPHIDE, 60/62%.—Solid, £13 5s. per ton; broken, £14 5s. per ton. Flake, £15 5s. per ton. Crystals 31/34%, £8 12s. 6d. per ton. All delivered buyers' works U.K., minimum 5 ton lots with slight reduction for contracts. 60/62% solid quality offered from the continent at about £9 15s. per ton c.i.f. U.K. ports. Broken 15s. per ton more. Crystals, 30/32%, £7 per ton, c.i.f. U.K. ports.

SULPHUR.—Flowers, £11 10s. per ton; roll, £10 5s. per ton; rock, £10 5s. per ton; floristella, £9 15s. per ton; ground American, £9 per ton—ex store, spot delivery. Prices nominal.

ZINC CHLORIDE.—British material, 96/98%, quoted £23 15s. per ton, f.o.b. U.K. ports; 98/100% solid on offer from the continent at about £21 15s. per ton, c.i.f. U.K. ports. Powdered 20s. per ton extra.

ZINC SULPHATE.—Continental make on offer at about £11 per ton, ex wharf.

NOTE.—The above prices are for bulk business and are not to be taken as applicable to small parcels.

### Coal Tar Intermediates

META XYLIDINE ACETATE.—2s. 11d. per lb. per 100%. Some inquiries.

PARANITRANILINE.—1s. 9d. per lb. Some inquiries.

BENZIDINE BASE.—3s. 3d. per lb. per 100%. Some inquiries.

SULPHANILIC ACID.—9d. per lb. per 100%. Some inquiries.

ALPHA NAPHTHYLAMINE.—1s. 3d. per lb. Small inquiries.

# Manchester Chemical Market

[From Our Own Correspondent.]

*Manchester, July 8, 1926.*

So far as actual changes are concerned market values for chemicals have kept fairly stable in this centre during the week. Some articles are certainly fractionally lower, but these are relatively few, and the effect is not important having regard to the fact that most items are steady to firm. From the point of view of business done little change in the position can be reported although, if anything, the tendency is towards increased dullness. This, however, is to be expected under the present industrial conditions.

### Heavy Chemicals

The price of acetate of soda has barely fluctuated, and £21 per ton is still being asked for this, although inquiry is only moderate. Saltcake maintains its inactivity, while quotations are still round £3 5s. per ton. Users of glauber salts are taking comparatively small quantities; this material is on offer at £3 15s. per ton. Bicarbonate of soda is a rather slow seller at £10 10s. per ton, in bags. Sulphide of sodium, although easy, shows no further change, 60–65 per cent. concentrated offering at £10 10s. per ton, and commercial at £9; buying interest, however, is still very restricted. Hyposulphite of soda is held for £14 10s. per ton for photographic quality, and £9 5s. to £9 10s. for commercial. For caustic soda the demand is on a fair scale at steady prices, 60 per cent. being quoted at £15 2s. 6d. per ton and 76 per cent. at £17 10s. Alkali is also a moderately active section at £6 15s. per ton. Chlorate of soda is in slow demand at 3⅛d. to 3¼d. per lb., the tendency of prices being rather easy. Bleaching powder is steady at about £8 10s. per ton, and a quiet business is being put through. Bichromate of soda is fully maintained at 3¼d. per lb. Phosphate of soda is currently quoted at about £12 15s. per ton, but the demand for this during the past week has been rather slow.

Prussiate of potash is quiet at about 6⅞d. per lb., prices for this material being slightly lower. There is not much demand for carbonate of potash at the moment, and supplies are now being offered down to £25 15s. per ton. Caustic potash, however, keeps firm at about £27 per ton. Chlorate of potash is still inactive, but values are about unchanged at 3⅞d. per lb. There is not much business being put through in permanganate of potash, although prices are fairly steady, commercial ranging from 5¼d. to 5½d. per lb., and B.P. quality round 7d. In the case of bichromate of potash sellers are holding firm on the basis of 4¼d. per lb.

For sulphate of copper the demand remains moderate at about £23 10s. per ton, f.o.b. Arsenic continues inactive, with offers averaging £13 10s. per ton, on rails, for white powdered, Cornish makes. Business in acetate of lime is of small dimensions, but there has been little change in the level of prices, about £16 per ton being asked for grey material and £7 15s. to £8 for brown. Acetate of lead is steady at £45 to £46 per ton for white, and about £40 10s. per ton for brown. There is only a quiet demand for nitrate of lead, which is quoted this week at from £40 to £41 per ton.

### Acids and Tar Products

Tartaric acid is well maintained at the higher price of 11¾d. per lb. quoted here last week, and a quiet business is being transacted. Citric acid is steady at 1s. 3¼d. per lb., although buying is rather slow. Oxalic acid keeps very dull, but at 3¼d. to 3⅜d. per lb. values show little change. Acetic acid is in moderate request at about £36 10s. per ton for 80 per cent. commercial and £66 to £67 per ton for glacial.

The by-products market remains nominal in most sections, supplies being scarce all round. For pitch round 80s. per ton, f.o.b., is still quoted, with creosote oil firm at from 6¾d. to 7¼d. per gallon. Refined naphthaline ranges from £12 to £15 per ton. Solvent naphtha is in short supply and is nominally about 1s. 9d. per gallon.

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The Indian Steel Industry (Protection) Act, of 1924, expires on March 31 next, and in pursuance of one of its provisions an inquiry is now being conducted by the Indian Tariff Board into the extent, if any, to which it is necessary to continue the protection of the steel industry, and regarding the duties and bounties which may be necessary for the purpose of conferring such protection.

# Company News

Indestructible Paint Co.—An interim dividend of 5 per cent., less tax, is announced.

Reckitt and Sons.—An interim dividend of 3¾ per cent., less tax, is announced for the quarter to June 30 last.

Canada Cement Co.—A quarterly dividend of 1½ per cent. has been declared on the common stock, payable on July 16.

Broken Hill South.—A dividend at the rate of 1s. 6d. and a bonus of 1s. have been declared, payable on August 14.

American Smelting and Refining Co.—A dividend of 1¾ per cent. on the common stock for the quarter, payable on August 2.

Lautaro Nitrate Co.—The directors have decided to postpone the payment of the next dividend during the present stagnation of sales.

Van den Bergh's Margarine Works.—It is announced that the company propose the conversion of the 7 per cent. loan into 5½ per cent. to the amount of 20,000,000 guilders.

New Tamarugal Nitrate Co., Ltd.—A meeting will be held in Valparaiso on July 30 to consider a proposal to capitalise £273,000 of the reserve fund, and distribute one fully paid share for every share now held.

New Transvaal Chemical Co.—The directors have decided to pay an interim dividend for the half-year ended December 31 last, at the rate of 3 per cent., less tax, on the cumulative first preference and 4 per cent., less tax, on the cumulative "A" preference shares.

National Smelting Co.—The net profit for the year 1925, after providing for interest charges, etc., amounted to £99,261, against £65,986 for 1924, while £23,389 was brought forward. A sum of £70,650 is carried forward, no dividend again being declared on the ordinary or deferred shares.

Amalgamated Zinc (De Bavay's), Ltd.—The profit for the half-year ended December 31 last was £28,383, and £18,070 standing to credit of appropriation account makes available £46,454. The payment of the 38th dividend of 1s. per share absorbed £25,000, leaving £21,454 to be carried forward.

Allen-Liversidge, Ltd.—After charging depreciation, &c., the net profit for the year to April 30, 1926, is £52,383, against £46,816 for the previous year. The sum of £5,000 is again placed to general reserve and £5,884 to reserve against patents, development, and goodwill account. A balance dividend of 5 per cent. is recommended on the ordinary shares, making 10 per cent., less tax, for the year, compared with 12½ per cent. for 1924–25. The "carry-forward" is increased from £5,173 to £6,863.

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### Packet Dye Manufacturer's Liquidation

At a meeting of the creditors of John Finlayson Hunter, County Pharmacy, High Street, Dingwall, chemist and druggist, and manufacturer of dyes, held in Glasgow, the statement of affairs showed liabilities £4,817 14s. 7d., assets £979 12s. 8d., leaving a deficiency of £3,958 1s. 11d. In 1919 Mr. Hunter commenced to manufacture packet dyes from recipes, for which he paid £150, and he disposed of them under the name of "Sunshine Dyes." The venture proved to be a dead loss, and the debtor estimated that in connection with the manufacturing and advertising of the dyes he lost not less than £2,000. Through carrying on the dye branch of the business he got into worse financial straits and had to obtain loans from friends, none of which had been repaid. The debtor had no proposal to submit to the creditors, and it was decided that the estate should be realised under a trust deed.

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### Registration of Chemists

The Legislative Assembly of the Province of Quebec has adopted an Act, which came into force on March 11, to incorporate the Association of Professional Chemists of Quebec wherein the title of "Professional Chemist" is reserved to members of the Association. The Act, however, does not prevent any other person from practising chemistry provided that he does not assume the name of professional chemist or any other abbreviation thereof. A suggested clause providing for a "closed profession" was refused reconsideration by the Public Bills Committee.

# 1927

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# Commercial Intelligence

*The following are taken from printed reports, but we cannot be responsible for any errors that may occur.*

## Mortgages and Charges

[*NOTE.—The Companies Consolidation Act of 1908 provides that every Mortgage or Charge, as described therein, shall be registered within 21 days after its creation, otherwise it shall be void against the liquidator and any creditor. The Act also provides that every Company shall, in making its Annual Summary, specify the total amount of debts due from the Company in respect of all Mortgages or Charges. The following Mortgages and Charges have been so registered. In each case the total debt, as specified in the last available Annual Summary, is also given—marked with an *—followed by the date of the Summary, but such total may have been reduced.*]

MAYS' CHEMICAL MANURE CO., LTD., Bourne, Lincs. (M., 10/7/26.) Registered June 22, debentures, to Bank; general charge. *Nil. November 12, 1925.

MORRISONS (DYERS AND CLEANERS), LTD., Hampton Hill. (M., 10/7/26.) Registered June 26, £500 debentures; general charge. *Nil. March 4, 1925.

## London Gazette, &c.

### Company Winding Up Voluntarily

RIBBLE MANUFACTURING CO., LTD. (C.W.U.V. 10/7/26.) By special resolution, May 26, confirmed June 22 A. Parker, 10, Mosley Street, Manchester, secretary, appointed liquidator.

## Receivership

TOTAL FIRE EXTINGUISHER CO., LTD. (R., 10/7/26.) H. Keasley, of Eldon Street House, Eldon Street, E.C., was appointed receiver on June 18, 1926, under powers contained in debentures dated January 29, 1926.

## New Companies Registered

BENTHAM CHEMICAL CO., LTD. Registered July 5, 1926. Chemical manufacturers. Nom. cap., £3,000 in £1 shares. Solicitor: G. R. Holt, 65, Bank Street, Rawtenstall.

CONSOLIDATED METAL AND BYE-PRODUCT CO., LTD. Registered June 30, 1926. Zinc oxide, lead and paint manufacturers, etc. Nom. cap., £3,000 in £1 shares. Solicitor: R. D. Edwards, Central Chambers, Coat Street, Swansea.

I. G. DYESTUFFS, LTD. Registered as a "private" company on June 28, with a nominal capital of £25,000 in £1 shares. The objects are: To carry on in Great Britain and elsewhere the business of agents and brokers for the sale of, wholesale and retail dealers in dyes, dyestuffs, chemicals, drugs, paints, varnishes, colours, industrial, pharmaceutical and other preparations, natural and chemical fertilisers of every description and tanning materials and ingredients, manufacturers and producers of and dealers in cotton, woollen, linen, silk and other textile cloths and fabrics, importers, exporters, general merchants, shippers, etc. The subscribers (each signing for one share) are: E. C. Giller, 91, Lloyd Street South, Moss Side, Manchester, clerk; J. E. Barlow, 23, Grange Drive, Monton, cashier. The first directors (to number not less than two nor more than twelve) are: F. E. Craven, A. Edge, A. H. George, A. M. de Greeff, W. J. Holland, R. Philippi, E. Selck, A. Singer, and F. Taylor. R. Philippi and E. Selck (who are not resident in Great Britain), and any director elected in place of either of them, are referred to as "non-resident directors." No board resolution is to be valid or effective unless or until at least one of the non-resident directors has agreed thereto. Solicitors: Skelton and Co., 90, Deansgate, Manchester. The file number is 214,683.

SEDLING FLUOR SPAR MINES, LTD. Registered July 2, 1926. Fluor spar mine owners, etc. Nom. cap., £5,000 in £1 shares. Solicitors: G. J. Simpson and Sons, Sheffield.

ROBERT STEWART AND SONS, LTD. Registered June 30, 1926. Gum and chemical inporter and exporter. Nom. cap., £2,000 in £1 shares (1,000 8 per cent. cumulative preference and 1,000 ordinary). Secretary: J. Murray, "St. Helens," Belmont, Surrey.

TOWER MANUFACTURING AND CHEMICAL CO. (LITTLE HULTON), LTD., Providence Works, Hilton Lane, Little Hulton, Nr. Bolton. Registered June 30, 1926. Manufacturing chemists, soap manufacturers and drysalters, etc. Nom. cap., £2,000 in £1 shares (500 preferred ordinary and 1,500 ordinary).

UNIVERSAL LUBRICANTS AND CHEMICALS, LTD., Midland Bank Chambers, Stephenson Street, Birmingham. Registered June 30, 1926. Manufacturers and refiners of, and dealers in, all kinds of oils, greases, soaps, paints and oleaginous and saponaceous substances, etc. Nom. cap., £5,000 in £1 shares.

### Nuvol Trade Mark: Appeal Court Decision

On Wednesday the Court of Appeal composed of the Master of the Rolls, and Lords Justices Warrington and Sargant, delivered its reserved judgment upon the appeal by the Standard Oil Co. (New Jersey), Incorporated, from a judgment of Mr. Justice Astbury, reversing the decision of the Registrar of Trade Marks, who refused to register the trade mark "Nuvol" in the class for illuminating, heating and lubricating oils, on behalf of the applicant, Mr. Herbert McDowell, a merchant of Liverpool. The appellants, the Standard Oil Co., opposed Mr. McDowell's registration on the ground that they had a mark in the register called "Nujol" in the class of medicinal and curative preparations of all kinds. They alleged that the mark Nujol had acquired a wide reputation in this country, and that the mark tendered by the applicant for registration was calculated to deceive and to lead to the belief that the goods under that mark were the goods of the Standard Oil Co. Mr. Justice Astbury held that the applicant's trade mark was not calculated to lead people to believe that that mark was for goods emanating from the Standard Oil Co., as the goods in the two cases were different, were used for different purposes and were sold to and bought by different people. He accordingly held that the Standard Oil Co.'s opposition to the registration of Nuvol failed. The Standard Oil Co. appealed from this decision.

The Master of the Rolls, in giving judgment, said he was of opinion that the decision of the Registrar of Trade Marks that the proposed mark was calculated to deceive was right. The two names were practically indistinguishable, and were both to be used for oils, although the oils were not used for the same purpose. He thought the appeal should be allowed and the refusal of the registrar restored.

Lords Justices Warrington and Sargant concurred.

### Ramsay Memorial Trust Dinner

A dinner was held at University College, London, on Friday, July 2, of the Ramsay Memorial Fellowship Trust. Sir Gregory Foster (Provost of the College) presided. Proposing "The Memory of Sir William Ramsay," he described Sir William's work during his 26 years as Professor of Chemistry at University College. The effect was seen, he said, in the great school of chemistry he built up and the large number of men who went from it to fill important posts. He was not only a great chemist, but a great teacher. Lord Chelmsford (chairman of University College Committee) proposed the toast of "The Trustees," and Sir Hugh Bell (chairman of the trustees), in reply, said that the trust welcomed men from many foreign countries, as well as the Empire, and the scheme was valuable not only because of the research work carried out by the fellows, but because of the fact that it brought men from other countries into touch with the British point of view. He hoped that soon the United States and Germany would send them scholars.

### Solidification of Helium

According to Dutch press reports, Professor Keesom, of the University of Leyden, has succeeded in obtaining helium in the solid form. The solid was clear, crystalline, and transparent. It will be remembered that the late Professor K. Onnes, of Leyden, who first liquefied helium, obtained by its means a temperature of 272° C. below zero, at which the liquid did not solidify. The results obtained by Professor Keesom are a distinct advance in the task presented in bridging the gap of about 1° C. between the lowest temperatures yet attained and the "absolute" zero of temperature, approximately — 273° C.